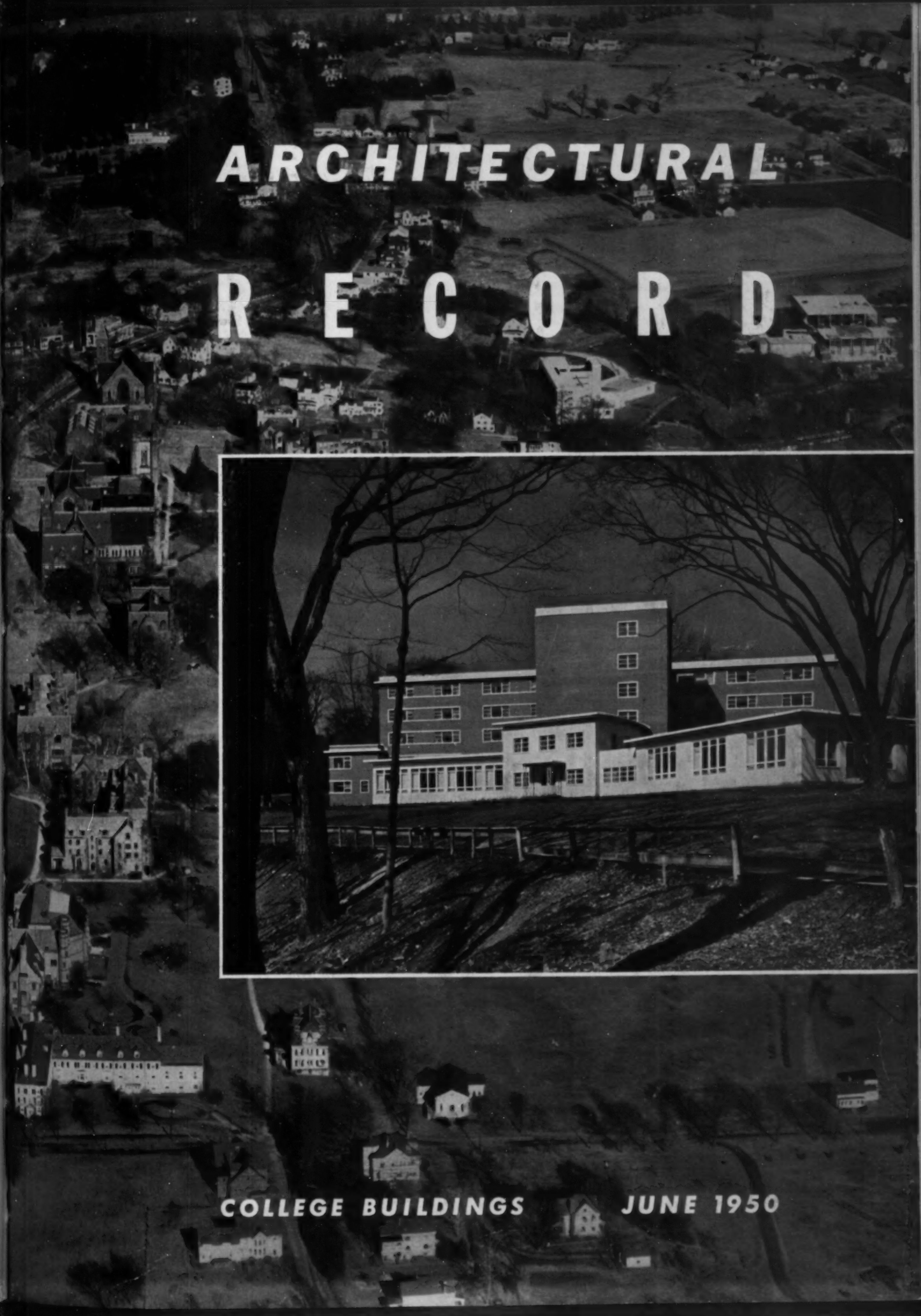
ARCHITECTURAL RECORD



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ARCHITECTURAL

RECORD

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COVER:
Mt. Holyoke College, South Hadley, Mass. Air view by Weitner Aerophoto Service; color photo of Lakeside Dormitory by Joseph W. Molitor.

Vol. 107 · No. 6 *June 1950*

THE RECORD REPORTS 9
News from Washington. By Ernest Mickel 15
News from Canada. By John Caulfield Smith 16
Some Observations on the Construction Outlook. By Thomas S. Holden 22
Construction Cost Indexes 28
REQUIRED READING 30
TOWARD MODERN ARCHITECTURE ON THE CAMPUS . . . An Editorial 101

BUILDING TYPES STUDY NO. 162
COLLEGE BUILDINGS

WHENCE COME THESE MODERN BUILDINGS? 102
LAKESIDE DORMITORY, MT. HOLYOKE COLLEGE 106
South Hadley, Mass. Office of Douglas Orr, Architect
KISKIMINETAS SPRINGS SCHOOL 112
Saltsburg, Pa. Hunter, Caldwell & Campbell, Architects
ROGERS CENTER RESIDENCE HALLS, INDIANA UNIVERSITY 114
Bloomington, Ind. Edward D. James, Architect
COOPERATIVE DORMITORY, VASSAR COLLEGE 118
Poughkeepsie, N. Y. Marcel Breuer, Architect
DORMITORIES, CLASS AND ADMINISTRATION BUILDINGS, CLAREMONT MEN'S COLLEGE 120
Claremont, Calif. Allison and Rible, Architects
HARRISON HIGHTOWER TEXTILE ENGINEERING BUILDING, GEORGIA INSTITUTE OF TECHNOLOGY 124
Atlanta, Ga. Bush-Brown, Gailey & Heffernan, Architects
FINE ARTS CENTER, UNIVERSITY OF ARKANSAS 130
Fayetteville, Ark. Edward D. Stone; Haralson & Mott, Associate Architects
FINE ARTS CENTER, MARYVILLE COLLEGE 133
Maryville, Tenn. Schweikher & Elting, Architects
SCHOOL OF INDUSTRIAL ADMINISTRATION, CARNEGIE INSTITUTE OF TECHNOLOGY 136
Pittsburgh, Pa. Marlier & Johnstone, Architects
FONDREN LIBRARY, THE RICE INSTITUTE 138
Houston, Texas. Staub and Rather, Architects
MIDWEST INTERLIBRARY CENTER 143
Chicago, Ill. Shaw, Metz and Dolio, Architects
FIRST OF THE HILL-BURTON HOSPITALS 146
George H. Lanier Memorial Hospital, Langdale, Ala. Robert and Company Associates, Architects and Engineers; Jesse M. Shelton, Associate Architect
APARTMENT INNOVATIONS 154
50 Joice Street Apartments, San Francisco. John E. Kramer, Owner and Contractor; John G. Kelley, Architect
WINDSWEPT APARTMENTS, MIAMI 157
Miami, Fla. Robert Law Weed and Associates, Architects-Engineers

ARCHITECTURAL ENGINEERING
TECHNICAL NEWS AND RESEARCH

MODULAR COORDINATION 160
It Means Economy Now
FOOD CENTER SERVES COLLEGE KITCHENS 162
ARCHITECTURAL ACOUSTICS 166
Part II: Noise Control in Buildings. By R. H. Bolt and R. B. Newman
PRODUCTS . . . for Better Building 170
TIME-SAVER STANDARDS . . . Electrical Conduits 173
MANUFACTURERS' LITERATURE 178
SEMI-ANNUAL INDEX 326

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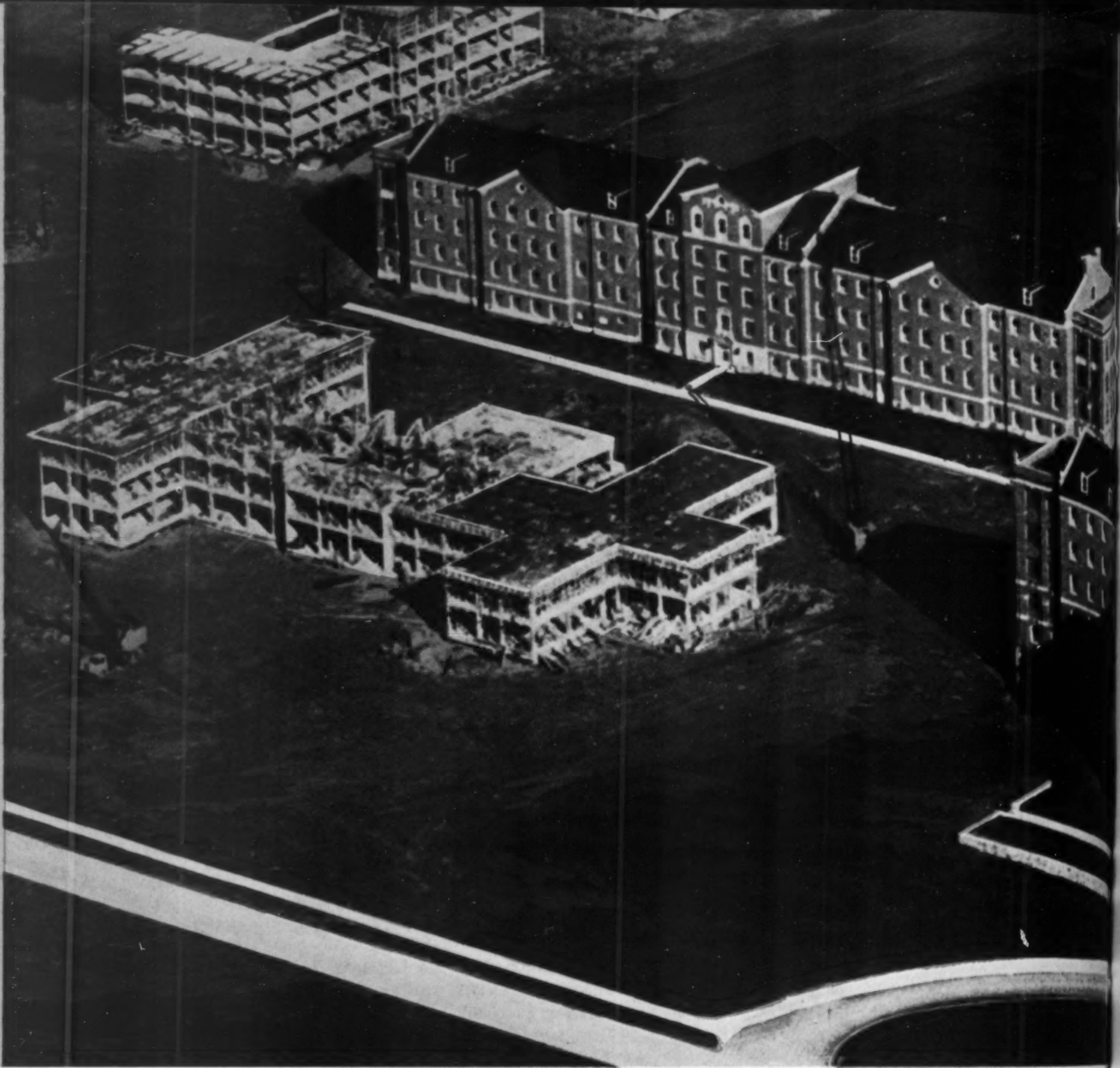
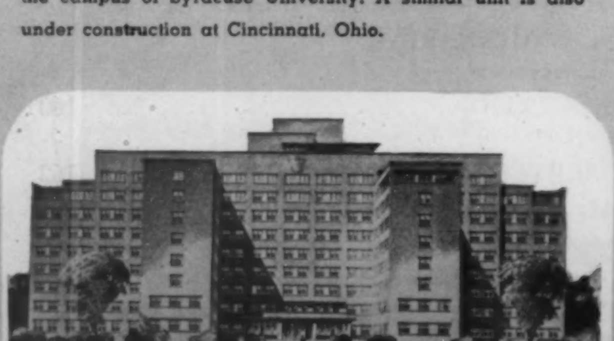


FORTY MILLION DOLLARS

Below: Veterans Administration Hospital being erected on the campus of Syracuse University. A similar unit is also under construction at Cincinnati, Ohio.



The Veterans Administration has established, as economic policy, the designing of the most modern and efficient hospital structures possible. These highly-developed, modern, functional hospitals not only afford the greatest measure of service to Veterans, but, because of radical departures from usual methods, these finer hospital buildings actually cost less.

This effective method of achieving hospitals of maximum excellence at a cost that is definitely lower, marks another milestone in the progress of advanced, large-scale planning for economical construction.

Under this program John A. Johnson & Sons, Inc. are now erecting the largest structure of any kind in the 125 years history of the City of Syracuse, N. Y. and another Veterans Hospital of equal importance in Cincinnati, Ohio.

John A. Johnson & Sons, Inc. were privileged to construct the even larger Veterans Administration Hospital group of

THE RECORD REPORTS

A.I.A. CONVENTION ATTRACTS OVER 2000 DELEGATES AND MEMBERS TO WASHINGTON

All Officers Reelected; Two New Districts Created: Northwest and Texas

MORE ARCHITECTS got together in Washington last month than ever had been assembled at one spot. Over 2000 delegates and members took part in the four-day program of the 82nd annual Convention of The American Institute of Architects May 10–13 with a harmony — at least on the surface — that made last year's spirited contest at Houston seem as distant as the much-decorated interiors of the Shamrock from the elegant decorum of the Mayflower.

The "progressives" were still around, but the only ripples they made on the surface of official convention deliberations came on resolutions debates.

Officers Reelected

All the officers were reelected and all but one ran unopposed. Thus A.I.A. officers for the coming year will be: Ralph Walker, New York, president; Glenn Stanton, Portland, Ore., first vice president; Kenneth E. Wischmeyer, St. Louis, second vice president; Clair W. Ditchy, Detroit, secretary; and Charles F. Cellarius, Cincinnati, treasurer.

By-laws were amended to increase membership of the Board of Directors from 15 to 17, and two new districts were created — the Northwest District and the Texas District. Irving G. Smith of Portland was elected as the first director for the Northwest District and Thomas D. Broad of Dallas as the first director from the Texas district.

Other new directors, elected for three-year terms, are: John Noble Richards, Toledo, Ohio, Great Lakes District; C. E. Silling, Charleston, W. Va., Middle Atlantic District; M. H. Starkweather, Tucson, Ariz., Western Mountain District; Howard M. Eichenbaum, Little Rock, Ark., Gulf States District.

Two general amendments to A.I.A. by-laws submitted by the Board of Directors were turned down by the convention. The first would have provided for election each year of a "first vice president and president-elect," who would automatically become president after a year as first vice-president. The other would have required United States citizenship as a future qualification for membership in the Institute.

Also rejected was a proposal from some field chapters of the A.I.A. that a study be made of the advisability of electing the Institute president annually by general vote of all members rather than by chapter delegates.

The only real flurry of contention arose over a proposal to study the question of naming regional directors by vote of membership within the region rather than by delegate vote at the annual meetings. There was some spirited discussion on this one, with President Walker, in the chair, advising that such a plan conflicted with A.I.A. by-laws. The convention decided to go ahead with the study anyway.

Another resolution approved by the delegates sanctioned A.I.A. participation in the activities of the Federation of Panamerican Association of Architects as a founder member and named Julian Clarence Levi as delegate and Harold R. Sleeper as alternate. Both are New Yorkers.

Awards Presented

Even at a convention which seemed to be more seriously concerned than usual with its major "theme" — urban planning and redevelopment — the announcement and presentation of the

Below left: Harold Davis of New Haven Conn., one of 27 new A.I.A. Fellows, with President Ralph Walker, F.A.I.A., and John W. Root, F.A.I.A., of Chicago; at right, Sir Patrick Abercrombie, M.A., F.R.B.A. contemplates the Gold Medal which has just been presented to him by President Walker as the climax of the annual dinner, held this year in the ballroom of the Hotel Mayflower

annual awards remained the highlight of the meeting.

Sir Patrick Abercrombie, M.A., Fellow of the Royal Institute of British Architects, received the Gold Medal of the A.I.A. for his "distinguished contribution to the profession of architecture and regional planning." The presentation was made at the annual dinner, at which Sir Patrick's response was the principal address. Sir Patrick, sixth foreign architect to receive the Institute's highest honor, was the Royal Gold Medallist in 1946.

Also honored at the annual dinner were 27 distinguished American architects who were advanced to Fellowship in the A.I.A. in recognition of their notable contributions to the advancement of the profession in original design, education and public service.

The new Fellows are: Harry Inge Johnstone, Mobile, Ala.; Jack Bass Smith, Birmingham, Ala.; Alfred S. Nibecker Jr., Pasadena, Calif.; Eldridge Ted Spencer, San Francisco, Calif.; J. Warren Armistead Jr., Atlanta, Ga.; Harold Heath Davis, New Haven. Conn.; John Ogden Merrill, Chicago, Ill.; Samuel G. Wiener, Shreveport, La.; Harold Buckley Willis, Boston, Mass.; John Gaw Meem, Santa Fe, N. M.; Leopold Arnaud, Hugh Ferriss, Talbot Faulkner Hamlin, Frederic Rhinelander King, Perry Coke Smith, Harvey Stevenson and Frederick James Woodbridge, all of New York City.

Also Ralph Edward Winslow, Troy, N. Y.; Lincoln Fechheimer, Cincinnati, Ohio; William Pope Barney and Joseph Patterson Sims, both Philadelphia, Pa.; Henry Y. Shaub, Lancaster, Pa.; James Chillman Jr. and John Thomas Rather Jr., both Houston, Tex.; Arthur Elliott Thomas, Dallas, Tex.; Clinton H. Cowgill, Blacksburg, Va.; and George Gove, Tacoma, Wash.

A.I.A. Honor Awards

Winners of the A.I.A.'s Second Honor Awards for Architecture, announced on the opening day of the convention, were on exhibition in the promenade of the Mayflower.

In the residential category, the First Honor Award went to the house of H. C. Hvistendahl in California, designed by A. Quincy Jones Jr., A.I.A., Los Angeles. Awards of Merit were given for the William Crocker house in Jausilito, designed by Mario Corbett, San Francisco; the home of Mrs. Harold Adams in Concord, Mass., designed by Hugh Stubbins Jr., Lexington, Mass.; and the Roberta Finney house in Sarasota, Fla., designed by Twitchell and Rudolph, Architects, Sarasota, Fla.

The Davison Department Store, Augusta, Ga., designed by Harold M. Heatley and Ketchum, Giná and Sharp, Architects, New York, received the First Honor Award for commercial architecture. Awards of Merit in this classification were given for Wallach's Clothing Store, Jamaica, N. Y., designed by Ketchum, Giná and Sharp; the H. A. Bercu Pipe Shop, Los Angeles, designed by Welton D. Becket, A.I.A., Los Angeles; Bullock's Pasadena, designed by Welton D. Becket; Santa Fe Ticket Office, Los Angeles, designed by Maynard Lyndon, Los Angeles; and Foley Department Store, Houston, designed by Kenneth Franzheim, F.A.I.A., Houston.

After careful study of the submissions in the field of ecclesiastical architecture, it was decided that no award should be made this year in that field.

Albert Heino of Chicago was chairman of the Committee on Honor Awards for Current Work. Juries for the three categories were as follows:

Residential — Miss Elizabeth Gordon, editor, *House Beautiful*, New York; Pietro Belluschi, F.A.I.A., Portland, Ore.; Thomas H. Creighton, A.I.A., editor, *Progressive Architecture*, New York; George M. Martin, F.A.I.A., Cincinnati; and James T. Lendrum, A.I.A., Small Homes Council, University of Illinois, Urbana.

Commercial — Walter O. Bode, gen-

(*Continued on page 234*)

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Pictured above and across-page as they were seen at the convention are (left to right): 1—President Harry Prince, New York Chapter; George Bain Cummings, F.A.I.A., Binghamton, N. Y.; William Lescaze, New York City. 2—Howard Eichenbaum, Little Rock, Ark., new regional director, Gulf States District, and Carl Feiss, Washington, D. C. 3—Dean Henry Kamphoefner, North Carolina State College School of Design; Douglas Haskell, Architectural Forum; Hugh Stubbins Jr., Lexington, Mass. 4—A.I.A. First Vice President Glenn Stanton, F.A.I.A., Portland, Ore.; Frank Lopez, ARCHITECTURAL RECORD; *Thomas S. Holden, president, F. W. Dodge Corp.; New York Regional Director Arthur Holden, F.A.I.A., New York City. 5—A.I.A. Past President Raymond Ashton, F.A.I.A., Salt Lake City. 6—Walter Bogner, Harvard University, Cambridge, Mass.; Miles Colean, F.A.I.A., housing consultant, Washington, D. C.*

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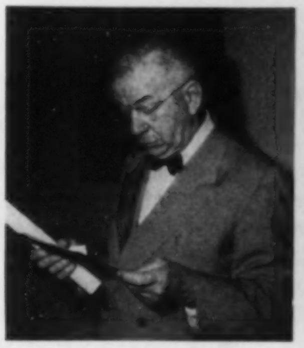
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7—Slocum Kingsbury, Washington, D. C.; Harvey Stevenson, new F.A.I.A., Geoffrey Platt, and Frederick Woodbridge, new F.A.I.A., and Walter H. Kilham Jr., all of New York City. 8—Philip Will Jr., Chicago; Robert Alexander, Los Angeles. 9—Emerson Goble, ARCHITECTURAL RECORD; *Mrs. Thomas S. Holden; "Veep" Glenn Stanton; Mr. Holden; H. Judd Payne, F. W. Dodge Corp. 10—John J. White Jr., A.I.A.'s acting director of Public and Professional Relations, Washington, D. C.; C. E. Silling, Charleston, W. Va., new regional director, Middle Atlantic District; Central States Regional Director Lorentz Schmidt, Wichita, Kas.; Alan H. Neal, Pittsburgh. 11—Carl Feiss; Morris Ketchum Jr., New York City. 12—A.I.A. Past President Douglas Orr, F.A.I.A., New Haven, Conn.; A.I.A. Executive Director Edmund Purves, F.A.I.A., Washington. 13—Harold D. Hauf,* ARCHITECTURAL RECORD, *and Mrs. Hauf*

19 STORIES HELD TO ONE FOURTH OF SITE TO ACHIEVE LIGHT AND AIR FOR 280,000 SQ FT WITHOUT SETBACKS

Lever House will rise 21 stories from its site on New York's Park Avenue between 53rd and 54th streets; but its main structure will be a 19-story tower of glass and stainless steel occupying only a fourth of the site. Without setbacks, the 280,000-sq-ft-home of Lever Brothers will have light, view and air whatever its future neighbors are like.

Architects Skidmore, Owings and Merrill consider the building, in its freedom from bulk and closed-in patterns, an answer to city planning problems.

An arcade open to the street on three sides, with a garden and pool in the center, will occupy the entire site at ground level. An auditorium and a glassed-in lobby leading to elevators will be the only enclosures on the first floor.

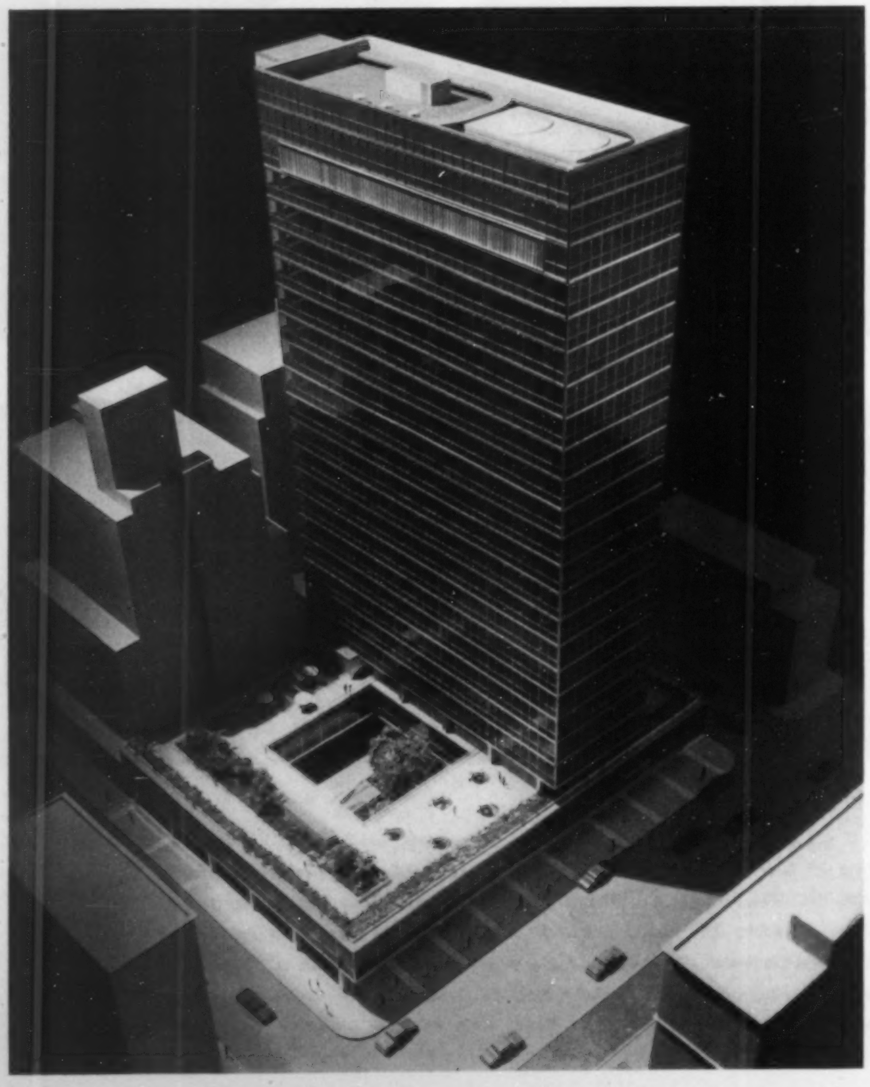
The second floor, also covering the entire plot, will have an open court directly over the ground floor garden and will be surmounted by a landscaped terrace.

An employee restaurant and recreation room will be contained in the third story, where the main structure begins. This floor will open on the terrace.

The main tower, near the north end of the site, provides additional space above the 21st floor, equivalent to three floors, to house a water cooling tower, elevator and air conditioning equipment. All mechanical facilities, including elevators, electric lines, stairways and ducts for complete air conditioning, have been designed for efficiency into a mechanical, vertical core on the west side.

Underground parking is provided for 80 tenant cars. Truck loadings and deliveries will be offstreet.

Heat-resistant glass and stainless steel will be used for the entire exterior skin of the steel and concrete structure. The glass, which has a blue tinge from outside though it will appear colorless from inside, will filter out 30 per cent of the sun's radiant heat.



APRIL CONSTRUCTION SETS ANOTHER ALL-TIME RECORD

Construction records were broken for the second consecutive month as F. W. Dodge Corp. figures showed contracts awarded in April totaled $1,350,496,000, or more than $50 million above the all-time high recorded in March.

Figures for the first four months of this year also set an all-time record at $4,161,082,000, up 58 per cent over the corresponding period last year and $1,300,264,000 over the previous record, made in 1948.

The April figure, covering contracts which provided for 128,457,000 sq ft of building space, topped March by 4 per cent and April 1949 by 60 per cent. Residential awards of $674,836,000 accounted for almost half of the month's total operations and showed a 17 per cent increase over March, 122 per cent over the April 1949 aggregate. Nonresidential projects were off 10 per cent from the March 1950 figure but increased 42 per cent from April 1949.

For the first four months of 1950, residential awards totaled $1,954,470,000, more than double the figure for the same period last year. Nonresidential construction, at $1,450,138,000, showed a 33 per cent rise over the first four months of 1949.

$23,600,000 PROGRAM FOR PLANT IMPROVEMENT VOTED

Allegheny Ludlum Steel Corp. directors have approved a new $23,600,000 plant improvement program to be completed within the next three years.

This program is in addition to a five-year program costing $30,000,000 started immediately after the war and now in the final stages of completion.

Manufacturing improvements include a new hot strip mill and additional cold rolling facilities at the Brackenridge, Pa., plant and additional cold rolling equipment at the neighboring plant at West Leechburg, Pa.

The new program also includes a project calling for the erection near Brackenridge of a research laboratory to be built of stainless curtain-walls instead of the more conventional building materials. The laboratory, which will overlook the company's Brackenridge plant, will provide the latest facilities for all phases of metallurgical research into high alloy and other specialty steels.

Undertaken to integrate more fully operations of Allegheny Ludlum, the new improvements supplement the current program.

THE RECORD REPORTS

WASHINGTON NEWS *by Ernest Mickel*

Housing Front Relaxes as 1950 Act Becomes Law — Restriction On Military Housing Fees Displeases A.I.A.; HHFA College Loan Program Ready to Go; VA Can Now Enforce Minimum Standards; National Hospital Program Approved Projects Total at 1145

Washington has settled back to a more even gait after the flurry of fighting over housing issues that had embroiled Capitol Hill since the first of the year. With the signing of the Housing Act of 1950 by the President, the federal housing agencies took steps to effect its immediate administration. The new bill to revamp the military housing program under the Wherry Act also became law and paved the way for lifting the ban against applications for this Armed Services housing which had throttled the program since last December 16.

The Bureau of Labor Statistics announced that March set new records in the volume of new housing started — 110,000 non-farm dwelling units, 38 per cent above February and 59 per cent above March a year ago. Private home contractors, through their National Association of Home Builders, made much of this record with justifiable pride. They brought it directly to the attention of Congress in testimony given the select House committee probing all lobbying activities. Well over a quarter of a million new dwelling units were started during the first quarter of 1950, the Bureau reported. The total approximated 270,000, greater by 59 per cent than the first quarter volume for 1949. Then B.L.S. gave builders credit with this statement: "For the past nine months, house builders have surpassed, by an ever-widening margin, their volume for the same month in the previous year."

Influence of Other Factors

Not to dampen this enthusiasm over the recent great gains in volume, but to put all segments of the industry in true perspective, a spokesman for General Services Administration said construction is proceeding at a pace which is satisfactory, though not phenomenal. He was James W. Follin, assistant to the GSA administrator. New housing starts in 1949, it is now conceded, were well above a million family units to establish an all-time full year record. This was some 10 per cent better than the previous high in 1925. But Follin makes the point that this nation's population has increased in the interim by about 30 million people, or roughly 25 per cent. We are operating on a national income now far above that of 1925, and the needs of our economy are vastly greater, he believes.

His arguments build up as follows:

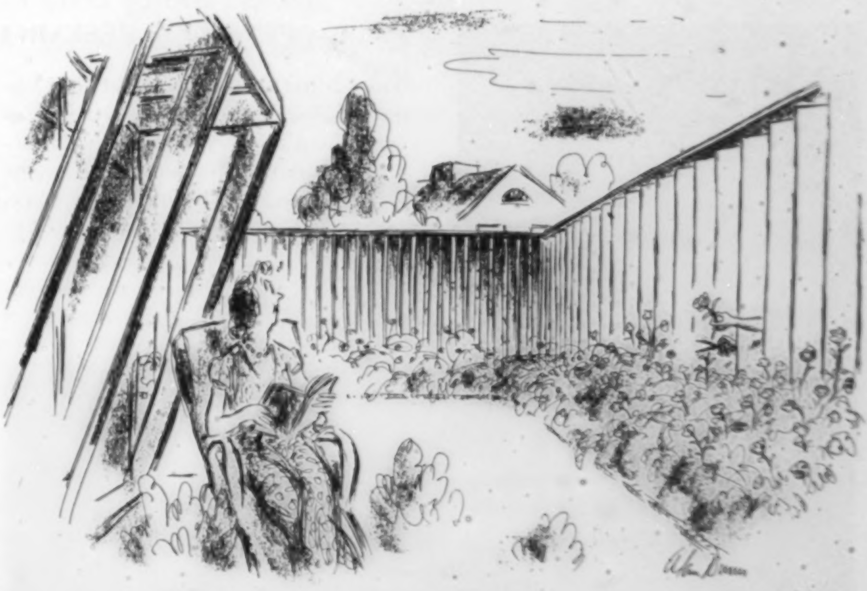
Housing and public works are interrelated. New housing creates a demand for community facilities of all types, new streets, new sewer and water facilities, new fire and police stations, new schools, new hospitals and other facilities paramount to community welfare. Conversely, the existence of these community facilities is an invitation to additional housing. New programs — public housing, slum clearance and urban redevelopment — have further tied housing and public works more firmly together. They will have a vital influence on the housing market of the future.

The creation and use of shelter becomes the predominant business of the construction industry as Follin outlines it. Public construction represents about one third of total new construction volume, housing represents a second one third; the two together comprise a substantial majority of all new building. Even if the public works volume is stripped of those items not dependent upon housing construction, the resulting total of housing and community facilities (those necessary to the use of housing) comprises more than half the total construction volume. From this he concludes that the prosperity of the industry is more dependent upon housing than on any other single field of construction.

Again, the future needs of America for public works facilities have been listed by GSA. In simple terms they are given as:

1. A $100 billion backlog of all accumulated requirements.
2. Highway needs alone amount to $41 billion, measured in current costs.
3. School plant needs are $1 billion a year for at least 10 years, probably longer in view of continuing population increases.
4. Sanitation needs are placed at $10 billion by the U.S. Public Health Service. This includes pollution control and water conservation.

In the face of these and other requirements as measured by the best opinion, the present construction rate of about $6 billion seems "so grossly inadequate" to Follin. He observed that



—Drawn for the RECORD by Alan Dunn

THE RECORD REPORTS

WASHINGTON

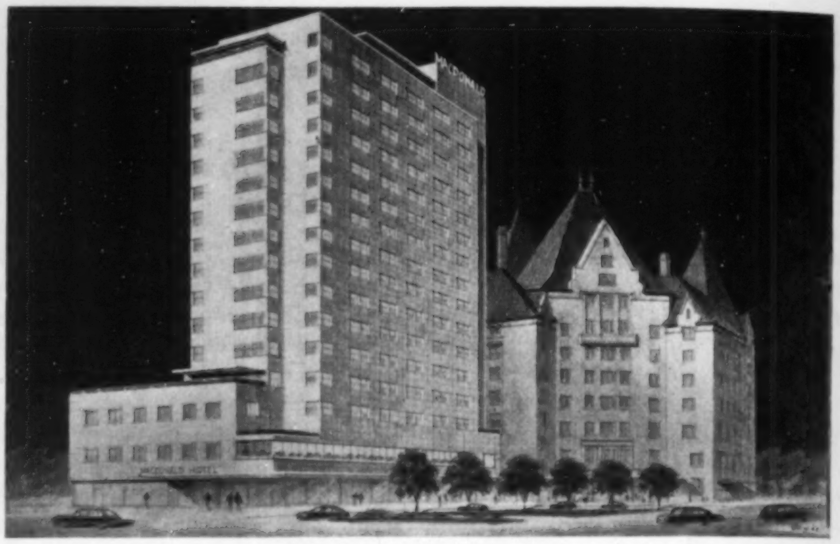
(*Continued from page 15*)

necessary public construction can stimulate the construction industry for some years; and housing construction can do likewise, if the industry can plan ahead as well as it can establish building records.

If the housing industry is to duplicate or better its 1949 record over the next several years, it must look far ahead; well beyond immediate prospects. As Follin views this:

"Industry has a definite obligation to look ahead for markets and for means to harness the full energies of housing and other construction. It also has an obligation to fulfill completely our national needs. The objectives of these obligations are the same. The satisfaction of the nation's needs can serve to employ the construction industry at full speed. Correct diagnosis of the opportunities in the housing market, both as to total volume and as to kind or type of housing or housing work, is important to every element in the housing industry. There must be adequate production of a vast array of building materials and equipment, the exact make-up of which will determine additional investment in manufacturing plant and equipment. Distribution facilities must be adequate to supply materials where needed, and here again the kind and types of housing

(*Continued on page 18*)



NEWS FROM CANADA *By John Caulfield Smith*

MODERN MEETS TRADITIONAL: ALBERTA HOTEL EXPANDS

THE NEW AND THE OLD meet head on in the architects' conception of an extension for the Canadian National Railways Macdonald Hotel at Edmonton, Alberta (see photo of rendering above).

The new 16-story wing, which the architects have treated as the main mass, will contain 300 bedrooms, banquet room, cafeteria, tavern and shops. The old building contains 185 bedrooms.

G. F. Drummond, chief architect for C.N.R., explains that various compromises were studied and discarded as unsatisfactory before the decision was made to adopt a frankly contemporary solution. John W. Root, of Holabird, Root and Burgee, Chicago, is consulting architect.

The admixture of the French Chateau style of the old Macdonald with the cleancut functional lines of the extension "should add a great deal of interest and character to the ensemble," Mr. Drummond suggests, expressing the hope that the building when complete will "combine the honesty of expression of contemporary design with a touch of Old World romanticism and in this respect give Edmonton something unusual and unique amongst hotels on the North American continent."

(*Continued on page 220*)

P.C.A. OPENS NEW RESEARCH LABORATORIES

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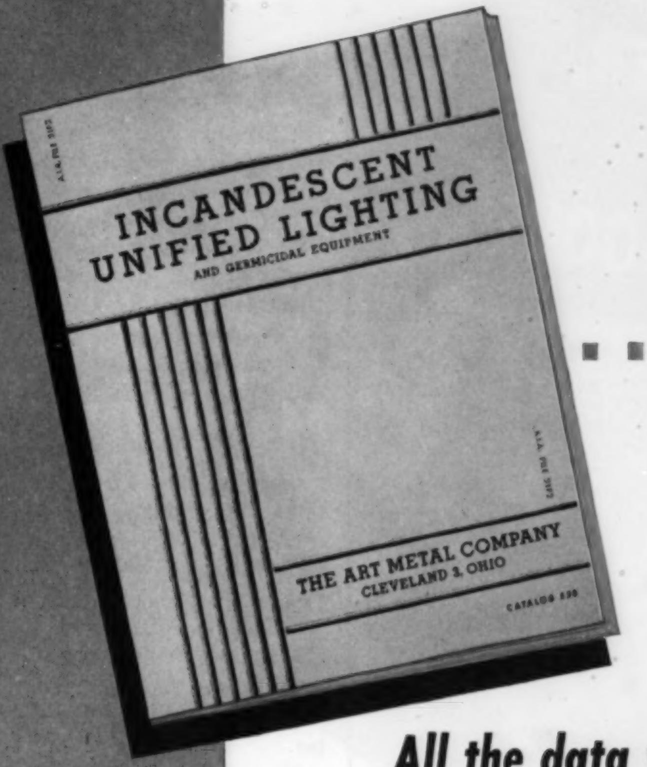

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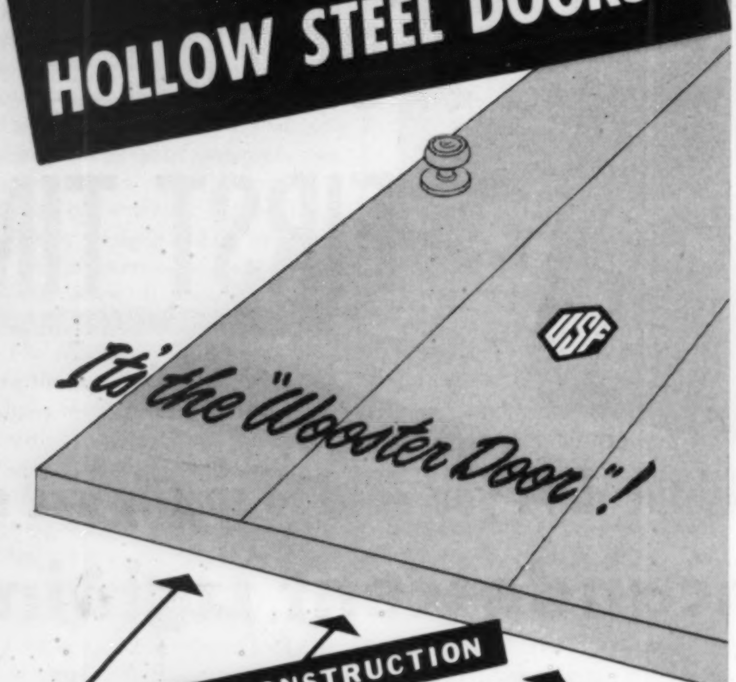

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(*Continued from page 16*)

work and geographical concentrations are important considerations.

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Title VIII Changes

The Congress finally finished its work on a bill amending the Wherry Act, which provides for construction of rental housing by private builders on the Federal Housing Administration loan insurance plan at military installations. This apparently cleared the way for resumption of this important program, almost dormant since last mid-December.

The new law opens the way for wide use of prefabricated housing for such military building, if the secretaries of the armed services so designate. The Senate Banking Committee had considered placing a percentage ceiling on the amount of prefabricated housing that could be used in the entire program, but in the final decision left this matter up to the services themselves. Committee members indicated they preferred to rely on the assurance from the officials in the Defense Department that full use would be made of factory-made housing or parts wherever feasible. The Senate amendment on this point, as accepted by the House and later enacted into law, reads: "That such plans, drawings and specifications (for military rental housing) may include the use on any project to be constructed under this Title of alternate materials or alternate types of construction including prefabrication, that provide substantially equal value and conform to standards established by the Federal Housing Administration."

While prefab manufacturers gained through this move, the architects were far from satisfied with other changes which force the application of the public housing fee schedule for architectural services to this type of housing. Again, the House, after passing its own bill without any such limitation on architects' fees, adopted the Senate's version,

(*Continued on page 20*)

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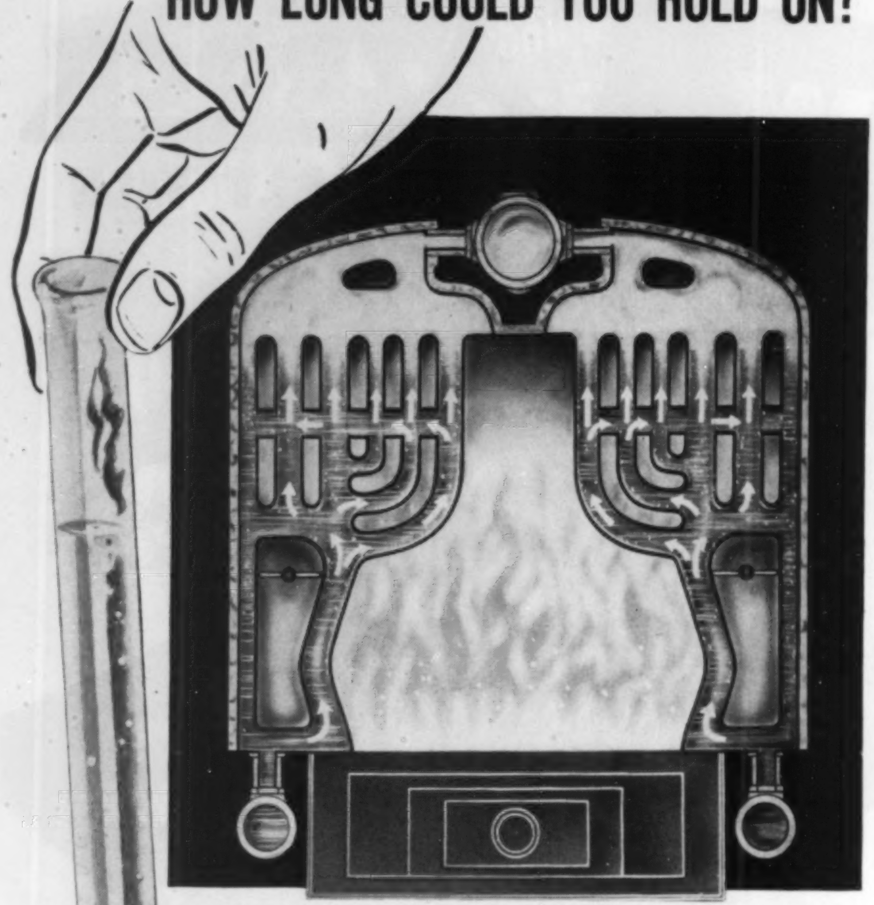

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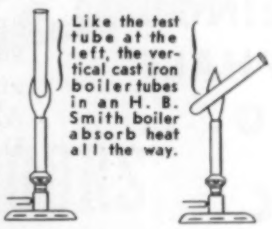

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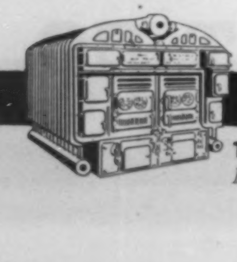

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WASHINGTON

(*Continued from page 18*)

permitting the change to stand. The new Act specifies no stipulated amount but directs that "an expense not in excess of that permissible under the schedule of fees allowed from time to time by the Public Housing Administration" should be paid to architects for designing the military shelter. This automatically applies the new fee schedule drawn last fall for public housing to the planning of military mental units.

The American Institute of Architects was not pleased with this restriction, as it implies the repetitious use of plans. It was pointed out that actually the architect designing military housing for construction in or near military bases runs into complex problems of utility connections, site planning, etc., especially where the location is far removed from any city. The Institute said it would prefer to have the agreement on a dwelling unit basis, a simpler and more competitive arrangement.

After a conference of A.I.A., PHA and National Association of Housing Officials representatives last fall, a public housing fee schedule was announced which would compensate architects on the basis of a selective formula — either through a lump sum contract, or alternate local reimbursable agreements. The architect has the choice of entering a lump sum contract worked out with PHA, or he may select an alternate plan which provides:

1. A fixed fee of 40 per cent total compensation under a lump sum contract.

2. An amount equal to the architect's production costs, limited to technical salaries on a time card basis.

3. Allowance of overhead equal to 50 per cent of technical production costs.

The sum of the three parts cannot, however, exceed the maximum amount under the agreed-on schedule, which is somewhat higher than that for the straight lump sum fee. If the sum of the three parts is less than this, the architect receives an additional amount equal to 25 per cent of the savings under the maximum. There was general agreement that use of the reimbursable contract would work out better for all concerned; the alternate lump sum arrangement was made available, however. The schedules are under scrutiny and open for revision at any time. Under the above fee schedule, the architects' compensation works out this way, PHA said:

Estimated Cost of Project	Lump Sum Fee	Reimbursable Contract Fee
$ 500,000	$ 17,500	$ 22,500
1,000,000	28,000	37,800
2,000,000	44,000	55,000
4,000,000	68,800	80,300
6,000,000	91,200	102,500
10,000,000	124,000	133,000
14,000,000	144,500	147,500

As of May 1, President Truman had approved preliminary planning loans for public housing under the Act of 1949 in the total amount of $47,926,800. This covered the planning of 265,216 units by local housing authorities in 431 localities. The agency promised it would enter into loan contracts with the authorities concerned as quickly as possible so the work can proceed. These current Presidential approvals cover low-rent public housing projects to be built within the next two years. They are a part of the six-year program authorized in the Housing Act of 1949. These early loans are intended to cover all expenses local housing authorities incur for preliminary surveys, site selection studies, appraisals, all architectural and engineering plans except final working drawings and the making of definite cost estimates. Definitive financial aid contracts follow.

HHFA and College Loans

The Housing and Home Finance Agency has embarked on an entirely new program of housing loan assistance to public or private non-profit institutions of higher learning. Authority is given in the Housing Act of 1950 signed by the President April 20. In brief, this gives the HHFA Administrator's office direction to make loans to colleges at the going federal rate of interest plus a charge of one fourth of one per cent a year to be repaid in 40 years and secured and repaid in such manner as the Administrator shall determine.

Congress voted $300 million for this purpose; that is, to provide funds for the loans, the Administrator may issue and have outstanding at any one time obligations for purchase by the U.S. Treasury in an amount not to exceed $300 million. Spokesmen said conceivably this could become a revolving fund in time and continue to serve its purpose without replenishing.

It is believed that many public and private non-profit schools that have been using surplus war housing on their

(*Continued on page 180*)

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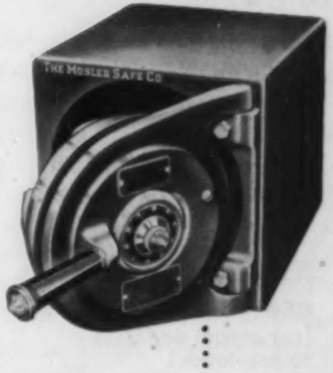

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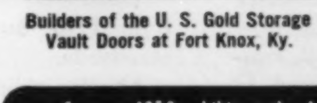

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SOME OBSERVATIONS ON THE CONSTRUCTION OUTLOOK

By Thomas S. Holden, President, F. W. Dodge Corporation

EXCELLENT long-range construction prospects, inherent in our postwar economy, can be realized if current national problems are resolved; the present government-supported construction boom will taper off some day, but underlying demand factors are very strong indeed.

I — ECONOMIC GROWTH FACTORS

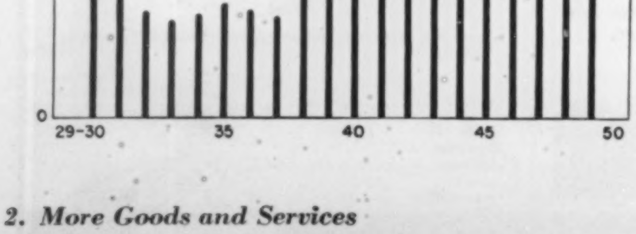
The factors of economic growth are the principal sources of demand for new construction. The construction industry prospers when there are needs for new facilities for production, trade, transportation, education, public health, religion, recreation, community development and family living.

Factors tending toward economic growth are present in the American economy today, perhaps in greater measure than ever before.

Let us examine some of them.

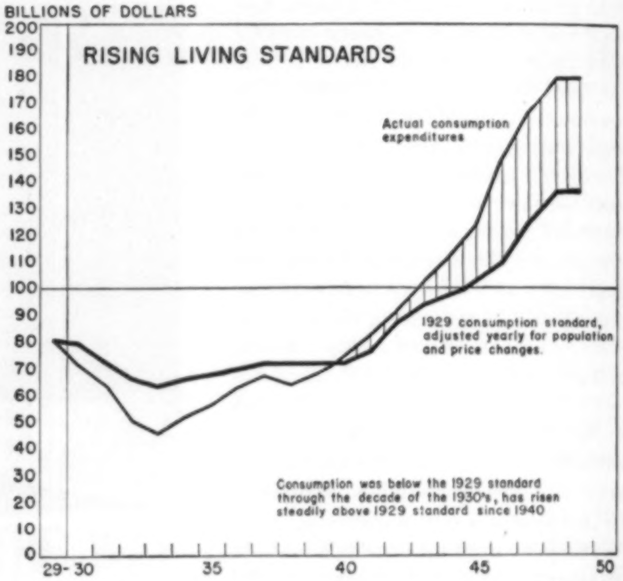
1. New Consumers

The population census now being taken is expected to show an increase of 19,000,000 persons over 1940. This compares with a 17,000,000 population increase in the highly prosperous 1920's and with a 9,000,000 increase in the depressed 1930's.



2. More Goods and Services

In the year 1948 and again in the year 1949, consumer purchases of goods and services amounted to $179,000,000,000.



This compares with a little over $80,000,000,000 in the highly prosperous year 1929. If the increase over 1929 had merely taken care of the increased population and higher prices, with no improvement in per capita consumption standards, the 1948 and 1949 consumption requirements would have been $136,000,000,000. The difference between this figure and the actual amounts spent in 1948 and 1949 was $43,000,000,000; this figure represents more and better goods and services, a higher standard of living.

The $43,000,000,000 improvement of 1948 over 1929 included the following items:

Better diet	$15,300,000,000
More liquor, tobacco, amusements	7,000,000,000
Services of various kinds	6,500,000,000
More non-durable goods (other than food, clothing, tobacco, liquor)	4,700,000,000
Better shelter (rental basis)	4,500,000,000
More durable goods	4,000,000,000
More and/or better clothing and shoes	1,000,000,000
Total	$43,000,000,000

The year 1949 would show some variations in detail from 1948, but the same total figure for improved standards.

All the goods and services bought by consumers were, obviously, produced and sold.

3. *More Industrial Production*

To serve the country's increased population and improved living standards, increased industrial production has been necessary. The story is sketched in the following record:

PHYSICAL VOLUME OF PRODUCTION

(Index numbers, Board of Governors of the Federal Reserve System, 1935–39 = 100)

	1929	*1940*	*1949*	*Peak*
Manufactures				
Durable	132	139	202	360 (1943)
Non-durable	93	115	168	177 (1948)
Total	110	126	183	258 (1943)
Minerals	107	117	135	149 (1947)
Total industrial	110	125	176	239 (1943)

Wartime peak production, accomplished by two- and three-shift operations in many industries, not only produced sufficient war material to overwhelm the enemy but also maintained a continuous rise in many lines of consumption. It also wore out and made obsolete much production equipment, which will need early replacement. It developed new ideas of plant design conducive to greater productive efficiency.

Between 1939 and 1947 the number of manufacturing establishments increased from 173,802 to 240,881; estimated sales of manufactured goods increased from $61,340,000,000 to $215,525,000,000.

4. *Savings Available for Investment*

Total individual savings increased fourfold between 1929 and 1948; threefold between 1940 and 1948. The Securities and Exchange Commission reported the following figures for the close of 1949:

SAVINGS OF INDIVIDUALS

Cash and bank deposits	$128,000,000,000
Government securities	71,000,000,000
Equities in savings and loan societies	12,000,000,000
Equity securities and private insurance	58,000,000,000
Government insurance and pensions	38,000,000,000
Total	$307,000,000,000

Presumably the first two items represent funds that could be drawn upon in considerable measure for investment in enterprise, and the third item can be drawn upon for housing investment. In 1949 individuals increased their holdings of non-government securities by $1,400,000,000.

In addition to these individual savings, there are many billions of dollars of corporate savings. Undistributed corporate profits amounted to $2,400,000,000 in 1940; $13,200,000,000 in 1948.

Private capital funds for expansion are plentiful.

5. *High Productivity*

Many factors have combined to produce today's high living standards for the people of the United States. To review them in detail would require an inventory of natural resources and an historical survey of our political, social and economic institutions and an appraisal of the spiritual values in American life.

Outstanding, and in many ways unique, has been our spectacular increase in output per man-hour of labor engaged in production. While this has not been steady and continuous, it is generally considered to have increased at an average annual rate of 2 per cent.

Certain economists have pointed out that this rate of productivity increase has resulted from an average 3 per cent increase in capital investment. In 1946 investment per employed worker in all manufacturing was $7113.

Improved productivity has taken place in the factories, in the mines and on the farms. Output per farm worker increased 50 per cent between 1909 and 1939; 30 per cent from 1939 to 1948. Seventy-five per cent of the nation's farms were electrified in 1948.

Paralleling increased productivity has been constant progress in improving efficiency and cutting costs of transportation, power, distribution services and construction. These things have been achieved by mechanization, applied chemistry and improved organizational and management techniques. All have involved enormous capital investment.

6. *More Capital Facilities Required*

Capital facilities wear out, become obsolete. This is true of machines, factories, warehouses, highways, railway roadbeds and every other physical facility.

Merely to provide today's living standards for the 1960 population will require enormous investment in new facilities of every kind. To improve output and raise living standards will require much more. Some economists think our annual rate of capital investment will have to increase over past rates.

Stahrl Edmunds, economic analyst, Northwestern Life Insurance Company, writing on "Financial Capital Formation" in the January 1950 issue of *Harvard Business Review*, states that it has taken an annual increase of 3 per cent in equipment to make a 2 per cent increase in productivity possible, and that a future stepping up of the rate of productivity increase may require average annual increase in net capital formation of more than 4 per cent.

This is more than a matter of machinery. It is also a matter of modern factories, warehouses, stores, highways, power plants, community facilities and every kind of building and engineering structure that makes for a more efficient and a more productive economy.

Potential requirements for improved facilities are much more concrete than any fanciful "pie in the sky" dreams. The *Engineering News-Record* has been running a statistical series on the construction backlog. As of December 31, 1949, it included $4,423,000,000 for contemplated industrial buildings, and $5,780,000,000 for contemplated commercial buildings. These figures compare with 1949 government estimates of industrial building totaling $974,000,000 and $1,001,001,000 for commercial buildings. While construction backlog statistics do not give immediate indications of trends, they furnish strong evidence of potential demand.

7. *Postwar Construction Investment Relatively Low*

In spite of record dollar volumes of construction in 1948 and 1949, total new construction investment in those years was low relative to national income, approximately 9 per cent each year. In 1925, 1926 and 1927, years of high prosperity and great economic expansion, new construction investment ran to 15 per cent of national income. Total physical volume of new construction in 1948 and 1949 was less than that of the war year 1942 and the peak years of the late 1920's; this is true in spite of the fact that the number of new dwelling units started in 1949 surpassed all previous records.

This does not, however, prove that new construction investment must necessarily again reach 15 per cent of national income. It does highlight the fact that the large volumes of recent years have consisted in minor degree of new construction facilities of a productive character to take care of future needs of an expanding economy.

These facts suggest that when the American economy enters a general expansion phase, total construction investment is apt to be even larger than it was in 1949. If you are bullish about the future of the United States of America, you have to be bullish about construction.

II — IS THE AMERICAN ECONOMY READY FOR EXPANSION?

This question cannot be answered with assurance until a growth trend is unmistakably established.

The construction upsurge of the second half of 1949 and first quarter of 1950 might conceivably be the beginning of such a growth trend, but such an interpretation of 1950 business conditions would be incorrect, according to the analysis of current trends which appears in Section III of this statement.

A very important and essential growth factor is missing at the present time.

The missing factor is a set of overall governmental policies which will command the hearty support of a clear majority of the American people. In all previous eras of rapid and sustained expansion there has been a far greater degree of unanimity than now exists.

The President of the United States was elected in 1948 by approximately one-half the voters, and those who actually voted numbered little more than half of those eligible to vote. The President has a program, some important parts of which are not supported by his own party. Congressmen talk economy, talk tax reduction, deplore deficit spending and inflation, vote pork barrel bills and increased spending. Some government officials talk encouragingly about business, others attack it. Officials talk more about the need of industrial expansion than they do about investment incentives. The opposition party has developed no unity of program or policy. In view of this confused situation, it is little wonder that investment confidence is today not very strong.

The American people have not declared in unmistakeable terms whether their preference is for maintaining a dynamic free-enterprise economy or for proceeding further with experimentation along the lines of the welfare-state philosophy. The elections of 1950 and 1952 will not solve all our problems; it is to be hoped they will define the direction along which the national economy will move hereafter.

The people will do well to remember that the vast expansion of the past and the high prosperity of the present time have resulted from substantial teamwork on the part of all the essential factors of the economy, including government, and not by government action alone. They will do well to realize that America's high productivity has resulted from continually increasing output per man hour of labor engaged in industry, agriculture and distribution rather than from any kind of private or public money magic.

III. — THE GOVERNMENT-SUPPORTED CONSTRUCTION BOOM

For purposes of the present analysis, it is convenient to separate recent construction contract figures into the following three categories:

Public building and engineering projects;

Private residential building;

Private non-residential building and engineering projects.

Recent trends of these three broad groups of construction projects are shown in the accompanying charts (see page 25).

The charts clearly show that the upsurge of contract activity which started in September 1949 and continued through the first quarter of 1950 was due in considerable part to increased public building and engineering contracts and in much greater degree to rising volume of private residential building. The trend of private non-residential building and engineering contracts has been practically horizontal.

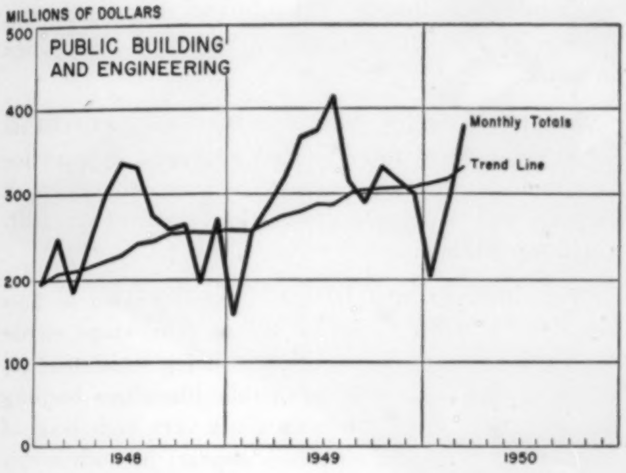
The uptrend of public building and engineering work has been considerably stimulated by federal grants-in-aid to the states for highways, hospitals and other purposes; it has included sizable direct expenditures by the federal government.

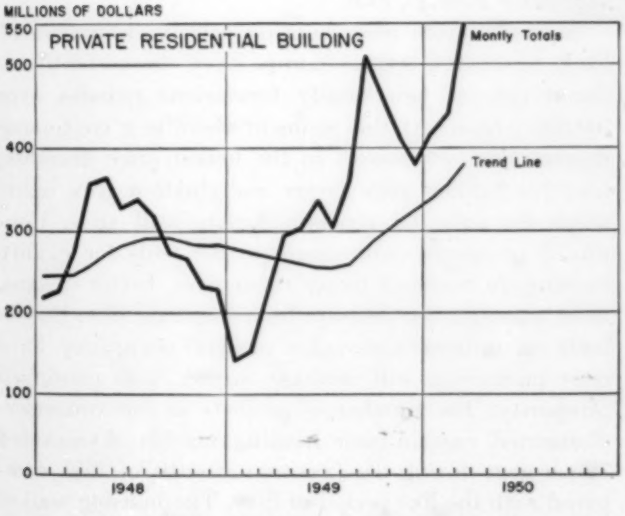
Private residential building has been greatly stimulated by liberal mortgage-insurance measures and by government purchases of insured mortgages through the Federal National Mortgage Association (Fannie May). The 1949 upturn followed almost immediately after acts of Congress providing new authorizations for liberal home financing. This coincided with a change in public psychology which during the preceding twelve months had been in mild revolt against high building costs. At some stage government stimulation of residential building, if continued at the current rate, will produce a housing surplus.

When and if a housing surplus is produced it will obviously appear at different times in different localities.

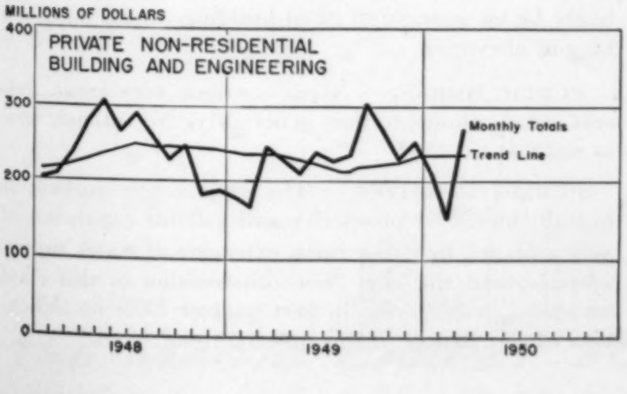
A recent survey of 470 cities by the National Association of Real Estate Boards brought out the following facts:

1. Production has caught up with demand for new houses priced at $8,000 and over in 65 per cent of the reporting cities.





CONSTRUCTION CONTRACTS — 37 EASTERN STATES



2. As for houses selling (with lots) below $8,000, 25 per cent of the reporting cities indicated a sufficient supply to meet all demands, and over-supplies were indicated for 3 per cent of the cities.

3. Rental housing in the higher priced brackets was reported in over-supply in 19 per cent of the cities. As for medium-priced apartments, 2 per cent of all reporting cities and 13 per cent of the largest cities reported over-supply. More supply than demand in low rental brackets was reported by 3 per cent of the cities. In the opinion of this writer rental housing occupancy is likely to ease considerably if federal rent control expires June 30th.

A vital background factor in potential housing demand is the current downtrend in new family formations, following the all-time peak number of marriages in 1946. A study in the March 1950 issue of *Survey of Current Business* estimated that the number of married couples increased at the rate of 959,000 a year from April 1947 to April 1949, and will probably increase at an average annual rate of 568,000 a year in 1950, 1951 and 1952. This is a strong indication that demand for new housing facilities will tend to slacken at some time, that housing production at the rate of more than a million new non-farm dwelling units a year will not continue indefinitely.

In fact, the advance estimates for 1950 construction activity put out by F. W. Dodge Corporation and by the government (Department of Commerce and Department of Labor) presupposed a downturn sometime this year. The Dodge estimates indicated a slight decrease in total contract volume for 1950, as compared with 1949; the government economists estimated the same total dollar volume of "work put in place" for the two years. If these estimates (which are not inconsistent with each other) are approximately realized there would necessarily be declining volume in the latter part of the year to offset the big first-quarter rise. It now appears possible that the present mood of the public favoring large expenditures for new housing, supported by the latest legislation extending liberal financing, may carry the housing boom through the rest of 1950.

However, even a government-supported boom is apt to run its course, just like any other kind of boom.

This analysis of the 1950 situation does not indicate that the current boom is actually the beginning of an era of broad economic expansion and continually mounting construction volume.

The underlying strength of the American economy is very great; its growth momentum is very strong. It is very doubtful whether the construction industry really needs artificial stimulation.

The prospect of getting past the feverish phase of the current boom, of getting rid of artificial stimulation, and of setting about the business of building a better and a sounder America should not engender any fears on the part of the construction industry. If the price to be paid is a mild recession in construction activity (and only a mild one seems likely) it will be amply justified. There is no present indication that the current construction boom will end in a serious bust.

IV. — THE NEAR-TERM OUTLOOK

For the long range construction outlook, bullish factors far outweigh bearish ones, barring the possibility of shooting war.

In the opinion of this writer stimulation by the federal government is currently being overdone, and could be markedly reduced in the interest of a sound, sustained program of providing the new facilities our growing economy will need.

When there is a decline from current peak activity in residential building, it will not likely be drastic but rather in the nature of an adjustment to a normal type of postwar market which will have progressed beyond the shortage stage into the stage of growth and improvement of living standards.

Some general observations on the outlook for particular classes of construction activity follow.

COMMERCIAL BUILDINGS — Demand should hold reasonably steady, particularly for neighborhood stores and shopping centers in outlying and suburban locations and store modernization in central areas. Office building space continued in tight supply in a number of cities; with continued high levels of business activity demand for new office buildings should rise at some stage. Increased business activity, plus the need for cutting distribution costs, will create demand for modern warehouse facilities.

MANUFACTURING BUILDINGS — The postwar peak was in 1946, since which time new construction in this classification has tapered off. The upturn which appeared in the March 1950 statistical record was due to inclusion of a large atomic energy project of the federal government and was not indicative of a change in trend of private industrial building. As indicated in Section I of this statement, a major upturn in this classification is likely at some stage although there is no present indication as to when this will occur. Dodge contract statistics cover buildings only, omitting processing equipment, which usually involves expenditures several times as large as the outlays for new construction.

EDUCATIONAL BUILDINGS — School-age population is increasing rapidly and is due to continue increasing for some years to come, indicating a mounting demand for new school buildings. This demand will be met, with or without federal aid.

HOSPITALS AND INSTITUTIONS — This program continues to mount, partly through direct federal expenditures and partly through federal aid to the states; likely to taper off at some time, though possibly not this year; continuing public demand for improved health services will require continued large-scale hospital building after the peak of federal hospital spending is over.

PUBLIC BUILDINGS — Expenditures have mounted each year since the war; off somewhat in the first quarter of 1950. This classification has been of relatively minor importance in the postwar period.

RELIGIOUS BUILDINGS — The volume has mounted continuously since the war. No present indication of let-up.

SOCIAL AND RECREATIONAL PROJECTS — There was a moderate drop in 1949, a further drop in the first quarter of 1950. No present indications of any change in trend.

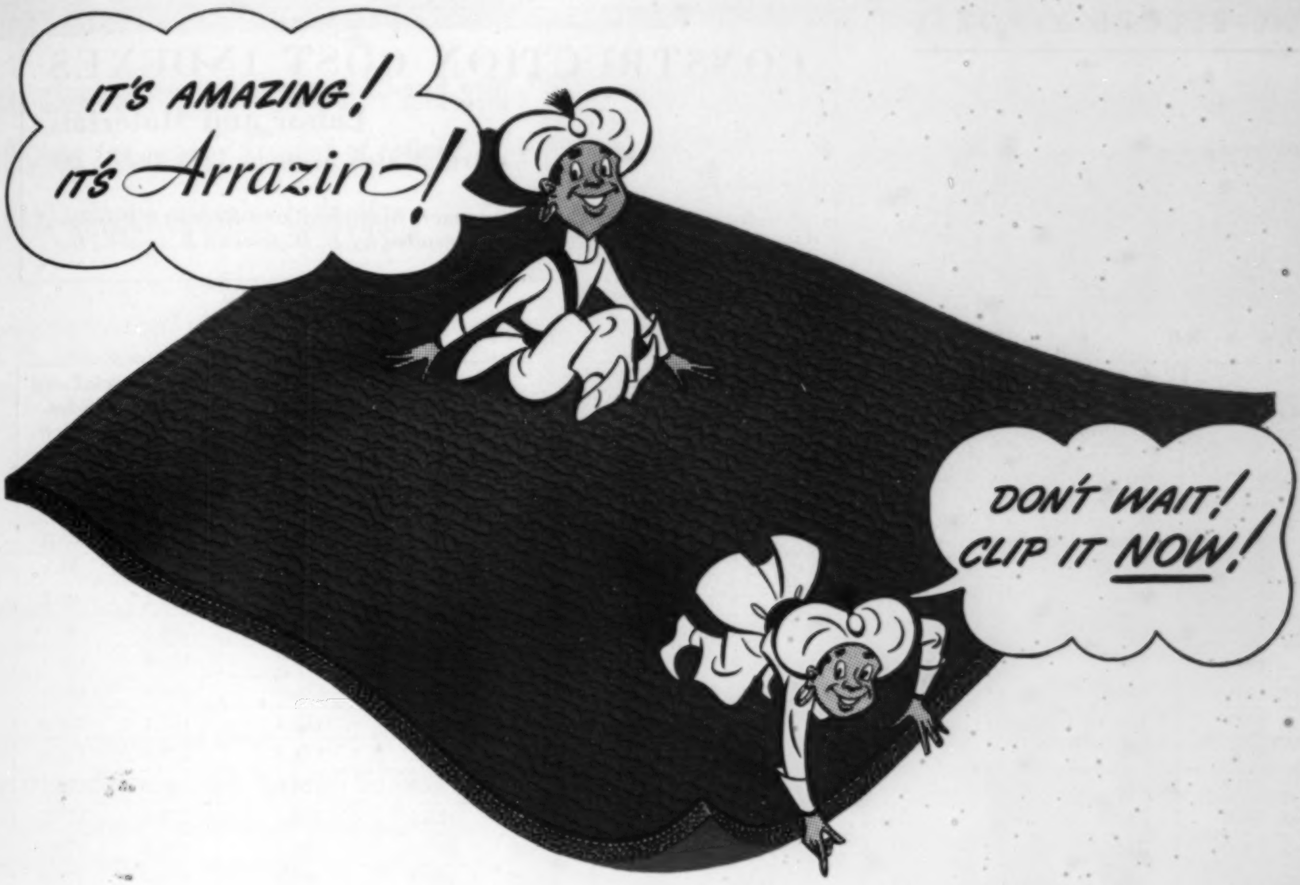
MISCELLANEOUS NON-RESIDENTIAL BUILDING — At some stage there will be increased demand for new and enlarged bus terminals, terminal buildings at airports and the like; no important development indicated for this year.

RESIDENTIAL BUILDINGS — As indicated in Section III, residential activity will at some stage recede from current peak levels. New housing legislation recently passed by Congress further liberalizes housing finance and will tend to maintain a very high level of activity until market surpluses appear; just when this will happen is at the moment uncertain. Current demand for new rental housing may be reduced somewhat upon termination of rent control, which may take place June 30, 1950.

Recession from peak housing activity is not at all likely to mean a serious slump. Even the currently reduced rate of new family formations remains over 500,000 a year. At this moment there is a continuing demand for new houses in the lowest price brackets; later, as families grow larger and children grow older, needs for enlarged accommodations will arise. Continued prosperity will stimulate demands for quality housing, in terms of larger room sizes, better designs, more amenities for pleasant living, and the like. Houses built on owners' orders for owners' occupancy have been increasing, will increase further with continued prosperity. The number of projects in this consumer-dominated custom-built housing market skyrocketed 73 per cent during the first two months of 1950, compared with the like period of 1949. The housing market will become more selective, more competitive. Apartment building should continue at satisfactory (if something less than peak) rates. More dormitories will be needed. At some stage (probably after 1950) there will likely be an upsurge of hotel building, which has been long in abeyance.

PUBLIC WORKS — Needs continue very great, federal aid continues to flow generously. No setback now in sight.

PUBLIC UTILITIES — The long range outlook is bullish; increased prosperity will call for expansion of power plants, new pipe lines, extension of water supply systems, and the like. New construction in this class increased in 1949, also in first quarter 1950; no indication of any change in this upward trend.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CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926–1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs.	
	Brick	*Frame*		*Brick and Concr.*	*Brick and Steel*
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1945	160.5	161.7	156.3	158.0	155.4
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
1949	243.7	240.8	242.8	246.4	240.0
Jan. 1950	242.8	239.4	242.3	245.2	241.2
Feb. 1950	244.1	240.9	243.2	245.9	242.0
Mar. 1950	244.9	242.0	243.4	246.0	242.2
	% increase over 1939				
Mar. 1950	**98.3**	**97.7**	**86.2**	**84.4**	**86.2**

ATLANTA

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs.	
	Brick	*Frame*		*Brick and Concr.*	*Brick and Steel*
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1945	132.1	133.9	123.2	122.8	123.3
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
1949	189.3	189.9	180.6	180.8	177.5
Jan. 1950	184.5	185.5	179.2	178.6	177.7
Feb. 1950	185.8	187.0	180.1	179.3	178.5
Mar. 1950	186.9	188.4	180.3	179.4	178.8
	% increase over 1939				
Mar. 1950	**116.6**	**126.7**	**89.6**	**84.2**	**88.8**

ST. LOUIS

1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1945	152.8	152.3	146.2	148.5	145.6
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
1949	221.4	220.7	212.8	215.7	213.6
Jan. 1950	220.3	218.4	214.7	218.4	216.5
Feb. 1950	222.7	221.3	215.6	219.0	217.4
Mar. 1950	222.8	221.2	215.8	219.1	217.6
	% increase over 1939				
Mar. 1950	**102.2**	**106.7**	**81.8**	**82.9**	**82.9**

SAN FRANCISCO

1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1945	146.2	144.3	144.5	146.8	147.9
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
1949	213.0	207.1	214.0	219.8	216.1
Jan. 1950	213.3	207.0	216.7	220.6	216.9
Feb. 1950	215.3	209.2	217.8	221.4	217.9
Mar. 1950	216.7	211.0	218.1	221.6	218.3
	% increase over 1939				
Mar. 1950	**105.2**	**112.5**	**85.8**	**81.8**	**87.4**

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.

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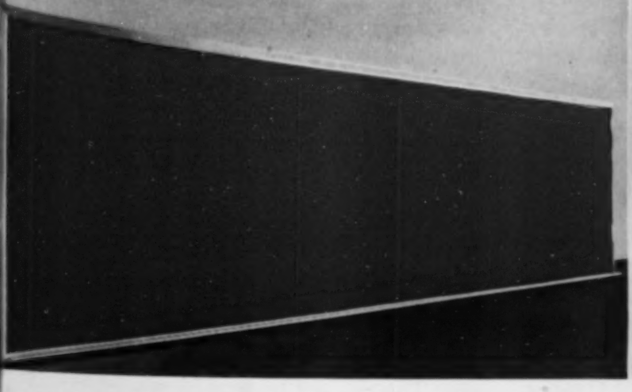
Horizontal green Nucite sliding chalkboard in aluminum framing on ball running strips. It consists of fixed chalkboard in rear, with two sliding panels in front on separate tracks. The sliding panels can be moved to any position for the entire length of the board. Variations of same can be made by having fixed panels in cork, or sliding panels in cork. Above view shows sliding panels at fully extended position.

Also manufacturers of Crest Cork Bulletin Boards and Roco Cork Bulletin Boards in tan and green, portable chalkboards and bulletin boards, and Bayer safety metal wardrobes.

ese photographs show an installation a laboratory at the University of idgeport. Charles Wellington Walker, chitect. O. F. Burghart, General Conctor. All chalkboards designed, built d installed by New York Silicate Book ate Company, Inc.



y-Rase Nucite Glass Chalkboard in fixed position in "Neatap" aluminum framing, with galvanized steel grounds.

Same installation but with sliding panels at center.

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REQUIRED READING

THE PROFESSIONAL PLAN

Contracting as a Profession. By Frederic W. Lord. Richard R. Smith (120 East 39th St., New York 16, N. Y.) 1949. 6¼ by 9½ in. 83 pp. $2.00.

Here is another attempt to counter the indiscriminate competition often apparent in the construction industry. Its crux is the "Professional Plan" which is said to guarantee efficiency, facility and economy in building. It is a method which the author seems to feel would release the construction industry from a competitive clutch and simultaneously give credence to its professional standing.

Mr. Lord indicates obsolescence in the usual bidding systems. The competitive bidding system, cost-plus contracts and labor-only contracts are not only unfair, he implies, but precipitate perhaps small, perhaps large, but nevertheless insidious injustices and dishonesties. The author analyzes and criticizes the three approaches, states their shortcomings.

Selective bidding, paid estimates and selection of a contractor on the basis of experience, efficiency and integrity are advocated by Mr. Lord. This, then, is his plan. The essentials include the following (in condensation):

1) selection of honest, efficient contractors. This can be ascertained in general by use of questionnaires;

2) the contractor selected is to submit an outside lump-sum detailed estimate, the excess of cost in the final work to be paid by him;

3) mutual agreement upon reasonable profit in terms of a percentage of cost;

4) contractor's books to be audited before final payment;

5) 100 per cent credit due to owner on all savings on the outside price.

A suggested contract form to be used by and between the owner and contractor is included.

All the above occupies the first five chapters of *Contracting as a Profession.* How Mr. Lord's plan affects contingent forces is treated in the 11 brief chapters that follow. Dealt with individually are the architect, consulting engineer; general, sub- and small contractor; manufacturer, banker, organized labor, government, and finally the Sherman Act.

For the main part, Mr. Lord's is no new idea, and his cry may be overrated. But it is encouraging to witness an earnest appeal to remedy injustices no matter how small.

WORLD HOUSING

Housing and Town and Country Planning. Department of Social Affairs. United Nations Bulletin No. 3. Sales No: 1949. IV. 8. United Nations Publications, Lake Success, N. Y. Columbia University Press (2960 Broadway, New York 27, N. Y.), sales agent. 8½ by 11 in. 118 pp. illus. $1.00.

The third United Nations Housing and Town and Country Planning Bulletins further elaborates the research of U.N. working groups (see Architectural Record, Apr., 1949, p. 28) which are gathering world-wide information on housing — information which will be of use and interest to planners and architects, economic, social and political administrators.

Housing projects discussed in this bulletin include current developments from New Zealand, Panama, South Africa, the United Kingdom, India. Low Cost housing in tropical areas, housing in trust and non-self governing territories are considered. Housing standards, rent controls, problems of construction and construction techniques, etc., are also cited.

There is a section on the International Labor Organization and Housing; and the Institute for Urban Land Use and Housing Studies. A 49 page bibliography supplies selected references from periodicals published during 1948.

PUBLIC LIBRARIES

Buildings for Small Public Libraries. Remodeled and adapted including new designs for branches. Prepared for the A.L.A. Committee on Library Architecture and Building Planning. By Ernest I. Miller, Chairman. American Library Association (Chicago, Ill.) 1950. 8½ by 11 in. 39 pp., illus. $1.25.

There has been a lapse of ten years since the American Library Association has published material on small libraries equal to that contained in this volume, a collection of photographs and plans for small libraries, branch libraries and converted libraries. Eighteen structures are illustrated, on spreads and single pages. Each includes a critical text, photograph or rendering and plan.

The book does not claim to provide all the answers. Says the A.L.A., ". . . it is not the purpose of this publication to add to the 'how' of building planning. Its object is to present a few examples of the end result of planning." Simplification of design, the greatest possible floor space at minimum cost are two aims. The buildings analyzed apparently attain these aims, satisfy stringent librarian requirements.

As for buildings adapted for library purposes, conversions have been made from churches, banks, stores, even a carriage shop — to demonstrate that a workable plan *can* be achieved. They are structures which, according to A.L.A. standards, may be considered good risks for library use.

As suggestions of what can be done simply and relatively inexpensively, the book warrants at least a look-in by one concerned with library design or redesign.

CAPITAL PUNISHMENT

Of Plans and People. Planning the City of Washington for its people as a worthy symbol of a great nation. A study of the plan of Washington, prepared by the Washington-Metropolitan Chapter of the American Institute of Architects (Washington, D. C.) 1950. 8 by 10½ in. 64 pp. illus. $.50.

In the vein of city planning, Washington's A.I.A. has used the occasion of the capital's sesquicentennial to venture pretty severe criticism of the layout and structures of l'Enfant's old town. The lag of creative effort, the new monuments and buildings no longer convincingly tied to the past in comparison with other capital cities succinctly is indicated. We look at Santiago, Caracas, Lima and see developing mature, new urban life, says Metropolitan-Washington A.I.A. before making specific proposals for the Capital's redevelopment.

"We must look at Washington both as a capital and a city. Because it lacks the richness inherent in a more functionally varied city, it will need more imaginative planning than any other city. This can not be done by men who are afraid to dream. As a capital and as a city, Washington must become a worthy symbol of United States democratic culture. . . . White temples and green gardens along the Potomac aren't enough."

The present need for inspired thinking, integrated planning can be fulfilled. Success depends on the timing of improvements with the requirements and available resources, warns the study.

TOWARD MODERN ARCHITECTURE ON THE CAMPUS

IN THE STUDY that follows, we present several recent college buildings which evidence increasing acceptance of more advanced concepts for the design of campus facilities.

The current boom in college building programs has brought the question of "architectural character" squarely before Boards of Trustees and Regents throughout the country. It is a matter of prime significance, transcending the mere selection of a style to conform with or complement existing buildings. It must be resolved primarily on the issue of whether a college building is a background for educational activity or an instrument of education. This is not a question of glorifying the functional aspects and creating a machine for education; rather it is an underlining of the colleges' responsibility for educating the whole man.

Our colleges and universities are charged with a dual assignment — the dissemination of knowledge and the advancement of human thought. This thesis is as valid in the field of the arts of design as it is in the sciences, humanities and social sciences. The history and philosophy of architecture, properly interpreted, deserve an important place in the curriculum; but above this there is every reason for the college, through the buildings it erects, to demonstrate the development of architecture which must, of necessity, form such an important component of man's environment.

The problem faced by college authorities in guiding campus development must not be minimized. There are always the thousands of alumni who may have strong opinions one way or the other, and occasionally the donor who insists that his new engineering research laboratory be clothed in gothic or colonial garb, in order to harmonize with existing buildings.

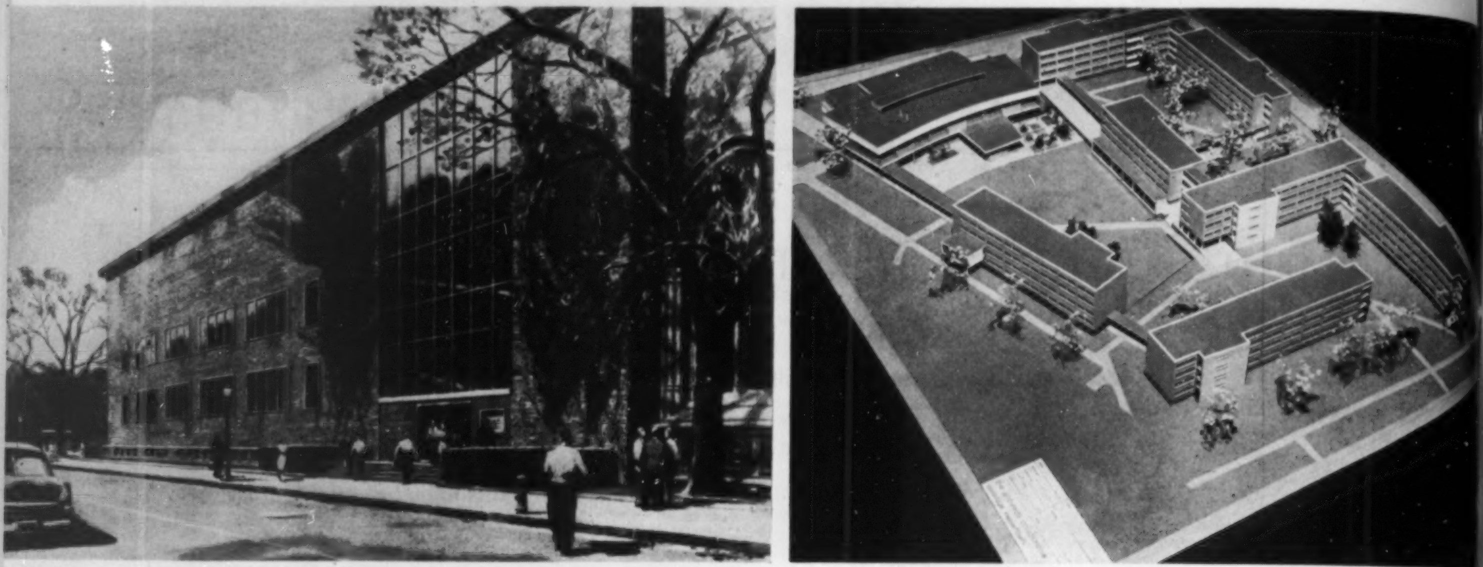
It is worth the effort, however, to press the point that harmony among the campus buildings is not a matter of repetition of existing forms and details, but may be achieved by skillful handling of materials, texture, color, and siting. Furthermore, the borderline between harmony and monotony is a very fine one. Contrast can be an asset to many a dull campus — particularly when the ivy sheds its leaves.

On many campuses where modern architecture has already taken root, the new buildings have been received enthusiastically by the people who use them most — students and faculty. This apparent ease of acceptance on the part of the academic population augurs well for the future. If at times the pace of architectural progress on the campus seems painfully slow, encouragement may be had from the thought that today's college students are the donors, trustees, alumni, and clients of tomorrow.

We predict, however, that long before today's students become tomorrow's donors, evidence of sound progress toward appropriate contemporary college building design will be visible on an ever-increasing number of American campuses.

Harold D Hauf

Editor-in-chief



Left, proposed addition to Yale University's Art Gallery; Philip L. Goodwin, architect. Right, Harvard's Graduate Center, now under construction; The Architects Collaborative

The problem of college building design is not one, but several. A college or university requires classrooms, laboratories, dining halls, dormitories, stadiums, even stores and factories. It may be in a cold, hot, wet or dry region. It may be well established or brand new. Yet there is a common denominator, we believe, as this study indicates. The problems have recently been seriously complicated not only by the wave of post-war GI students, which is now subsiding; the country's general economic level being high, colleges are experiencing steady increases in enrollment which are expected to continue. One serious matter is a shortage of housing of all types. It is heartening, then, that the National Housing Act of 1950, just passed and signed by the President, contains in Title IV a provision for making loans to educational institutions for housing. Title IV is unusual. Under it, for the first time, HHFA is empowered to make direct loans (not merely to insure mortgages) for this specific purpose. The term for such loans is long — 40 years. The interest rate is very low. What constitutes "housing" is not determined by the Act, except that it must provide housing for students or faculty; it might include dining and other facilities; it might consist of single-family houses or huge dormitories. The total funds issuable at one time amount to only $300 million, which, though not a large sum, is expected to become a revolving fund. The only specific limitations require that construction be economical, that no "elaborate or extravagant design or materials" be used. HHFA is now hurriedly setting up machinery to cope with Title IV.

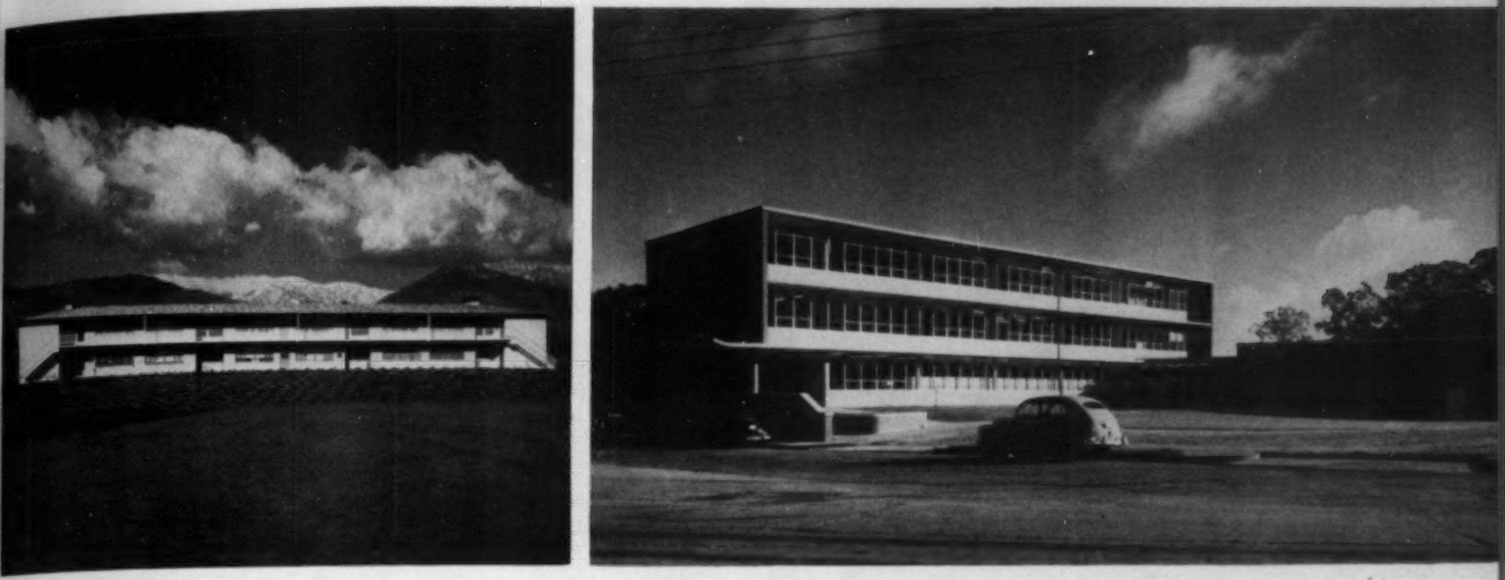
Architectural Record's Building Types Study Number 162

COLLEGE BUILDINGS

Whence Come These Modern Buildings?

It is not so long since the first modern building on an American college campus caused a cyclone of controversy. It is barely a longer time since colleges and universities were concentrating on building stadiums, vast structures chiefly utilitarian, whose "architecture" was mere surface adornment. It is really very little time since the typical college building had to be a Georgian, Colonial, Collegiate Gothic, or possibly a Romanesque structure; and whatever its style, one was earnestly informed that the particular building under consideration was the true expression of collegiate spirit.

Look briefly through the illustrations here and on succeeding pages. Among the examples are some which are reminiscent of a campus or regional style, it is true; but none is the faithful stylistic copy of a few years ago; and many, possessed of that intrinsic style which comes only when a gifted architect labors faithfully to get the utmost out of the needs his building must meet and the materials he can employ, look like nothing ever



Robert Frampton Photo

Joseph Molitor Photo

Left, dormitory, Claremont Men's College; Allison & Rible, architects. Right, Textile Engineering Building, Georgia Institute of Technology; Bush-Brown, Gailey & Heffernan, architects

seen before on a campus. The buildings are various in purpose, in the degree of satisfaction with which they function, and in esthetic quality. Far from being isolated examples, they are merely a few representatives of many more now being designed or under construction on campuses all over the nation. Of course there are also many being built to conform to established stylistic concepts as well; but compare the quantity of non-stylistic college buildings now with that of a few short years ago.

Well, what has caused this change in attitude?

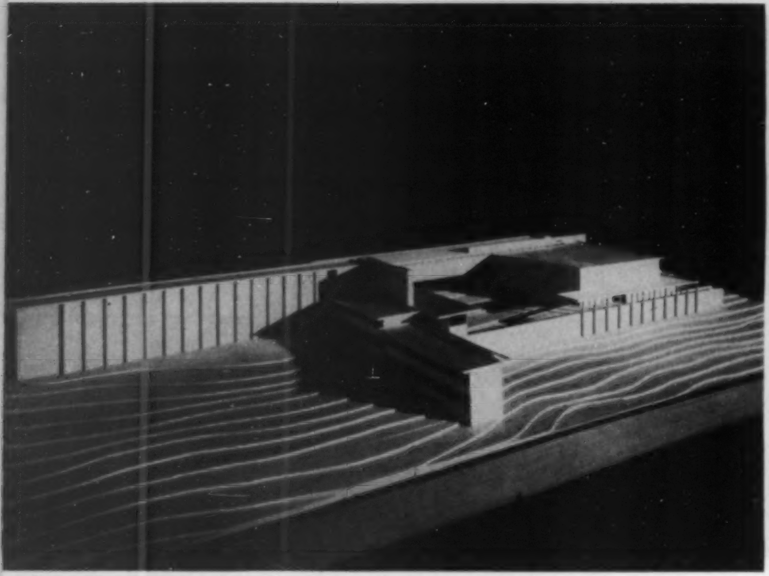
Superficially, there appear to be as many reasons as there are examples. In one case, economy may be paramount; costs of construction, equipment and maintenance have risen for college buildings as much as for any other type. A building lacking the complex surface adornment of Collegiate Gothic costs relatively less to build. That is obvious. Yet costs vary widely, and the reason for this variance must lie elsewhere than in architectural treatment. In a survey of 1949 building costs conducted by the magazine *College and University Business*, published in its January 1950 issue, dormitory construction costs ranged from \$.52 to \$1.62 per cu ft, laboratories from \$.80 to \$1.89; for several buildings, all on the same campus but for differing purposes, the range went from \$.44 to \$1.43. Geographical location, purpose, size and many other factors besides architectural design influence cost. Presumably the buildings all on the same campus had some architectural similarity. No, blind faith in one or another style of architecture as the most economical is faith misplaced; although it should go without saying that any good architect strives mightily to get his client a full dollar's worth of building.

Another favorite argument for contemporary design appeals to the pragmatist. It is functional, we hear; on the practical levels of convenience of layout, of furthering the business of teaching, contemporary buildings function well. So they do, the good ones. Remember also, however — and this at the risk of committing mental heresy — that the buildings at Oxford in England also function, and for their purpose function well. There, principles and often methods have continued unchanged for many more years than the life of the oldest American college. Tradition there has a function too, a function which, despite our protestations, can hardly be emulated by an American institution. The very atmosphere of education is different here. Should we continue to bolster our academic egos by copying an older country's physical institutions? It was natural once for us to follow. Should we now lead architecturally, as our forefathers pioneered in exploration, in commerce, in exploiting the machine? (And incidentally, how many of us know that Eton, another British school of strong tradition, possesses buildings designed by Marcel Breuer?) Yes, function has several meanings, not all of them pragmatic, and to function well is not the prerogative solely of the "modern" building.

One cannot deny the force of public opinion, of popular acceptance. Quite probably one true answer to our question is to be found here. Public familiarity with modern stores, office buildings, factories, hospitals and houses of course increases rapidly day by day, as more are built. What was a *cause célèbre* yesterday scarcely causes a raised eyebrow today, particularly since the war. Familiarity breeds acceptance. We find the Boards of Trustees of two institutions so widely separated as Vassar and the University of Arkansas each deliberately selecting an architect for his ability to design a good modern building.

Often enough to be disturbing, we must admit, such acceptance has the appearance of being nothing more than a nod in the direction of a current mode. Tuckasaug's new dorm is modern, so Tuskaroe's must be. Another cautious approach is evident in the determination to proceed half a step at a time, blending the

W. M. Glenn Photo

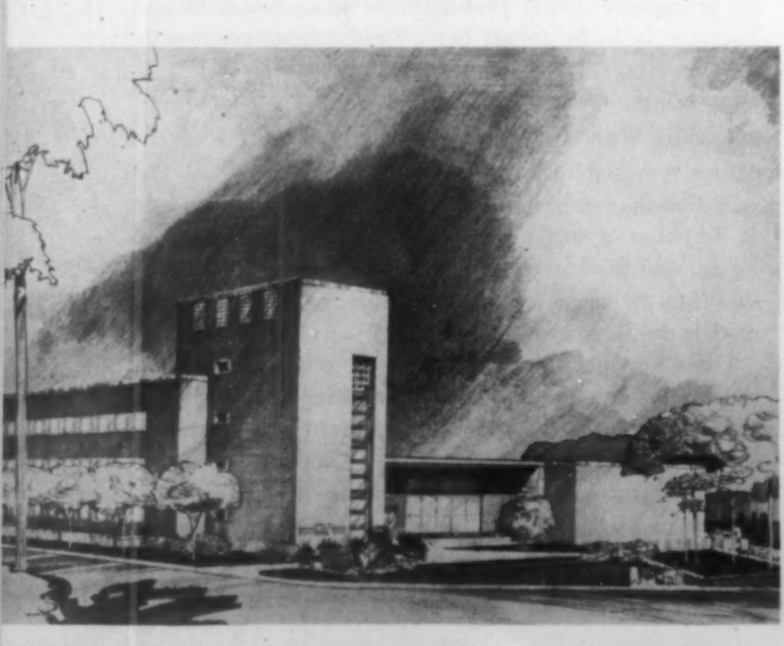


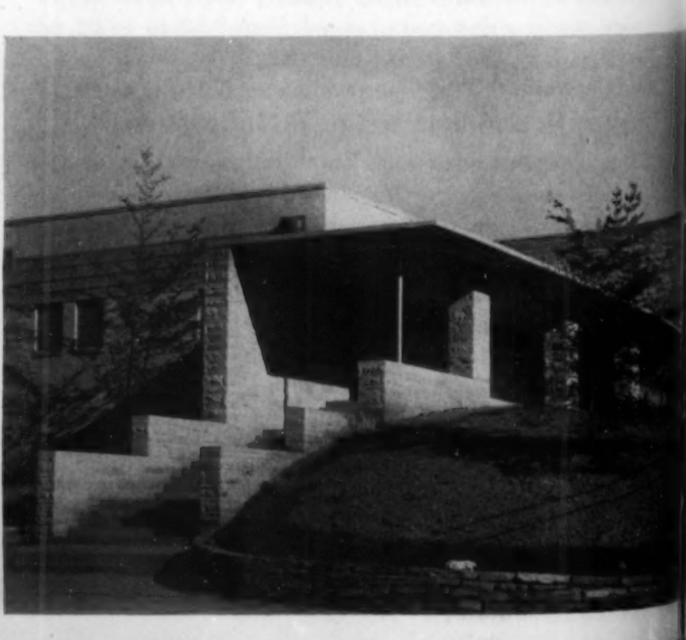
Left, model; right, construction; Maryville College (Tenn.) Fine Arts Center; Schwiekher & Elting, architects

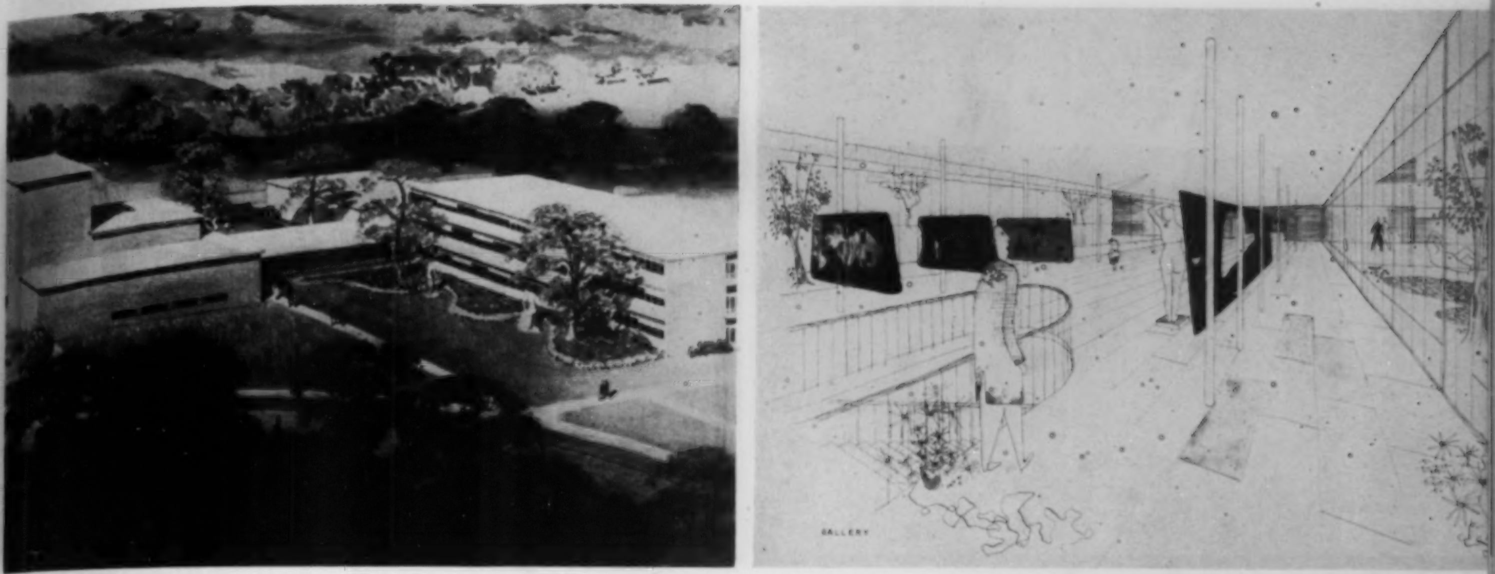
new "style" so imperceptibly into the old forms of existing buildings that an unappetizing architectural sawdust, much like unseasoned, crumbly hash, results. This is possibly the toughest architectural form the campus problem can take, but it can be licked. To make good hash one must season with both vigor and compassion. The architects of Claremont Men's College, shown in this issue, faced it in slightly different form. They had a campus virtually bare, encumbered only by a few minor structures destined for removal anyway, to embellish; but they had also a mandate to create in architectural harmony with a local Spanish-Italianate-Mediterranean inclination. Deprecatingly the architects have told us that other work of theirs is more vigorously modern; but they need not apologize. The Claremont buildings have ample strength of design; the bow to tradition does not hurt them; it is accomplished with a rare, complete understanding of the gorgeous site, the times, materials and the College's aims.

One wonders if the Board of Trustees and the donor who limit an architect unduly in such matters realize how close is their attitude to that of a political dictator who, unsure of himself esthetically, decrees that all building under his jurisdiction — which is *all* building, to his people — shall conform to a certain style. This has happened at least three times within recent years, in Italy, in Germany, in Soviet Russia. What is wrong about such a practice, in American college buildings as in the other countries named, is not so much the dead, level, heavy sameness of the results, nor even their

Left, School of Industrial Administration, Wm. L. Mellon, Founder, Carnegie Institute of Technology; Marlier & Johnstone, architects. Right, Dining Hall, Rogers (dormitory) Center, Indiana University; Edward D. James, architect







Left, rendering; right, perspective of Gallery; Fine Arts Center, University of Arkansas; Edw. D. Stone and Haralson & Mott, assoc. architects

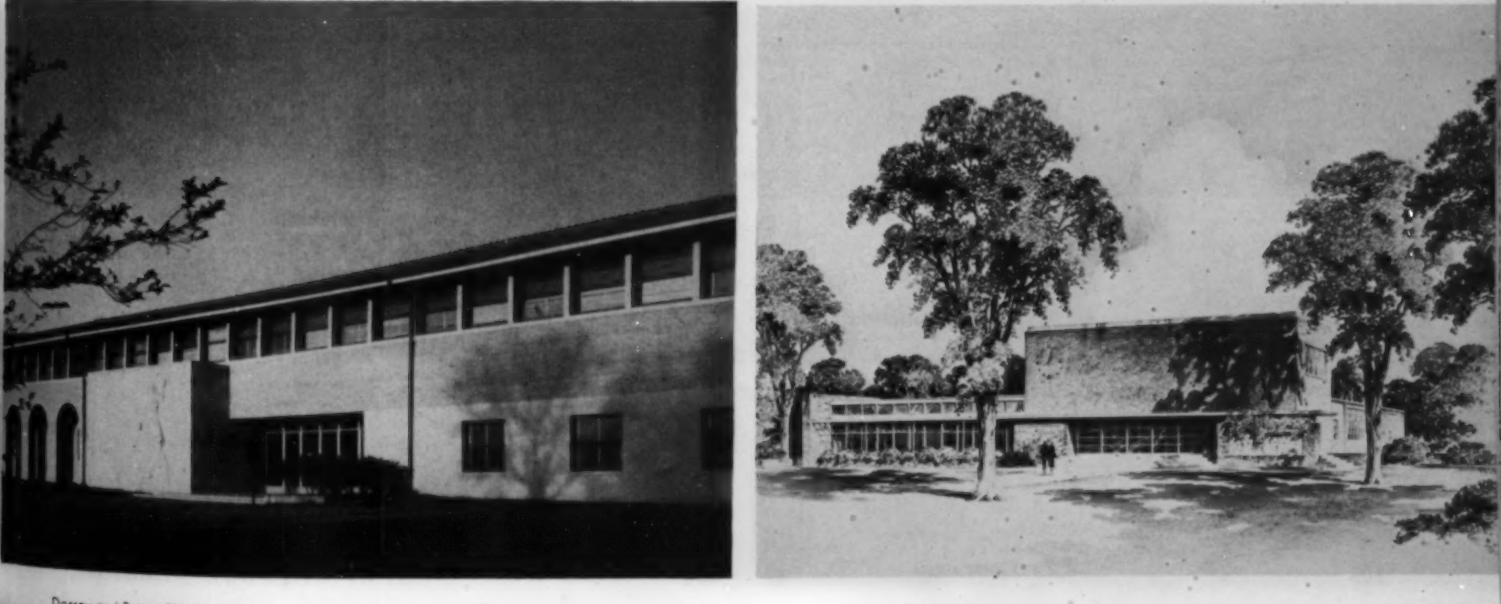
architectural inappropriateness. It is the fear of advance, the denial of inquisitiveness, which they express.

And here we come at last, though deviously, to the heart of the matter. The only true scholar or scientist or researcher — or teacher — is the man possessed of an eternally inquiring mind. The thirst for knowledge is no idle phrase. If the student should be inquisitive, then should not the buildings which surround him, at least during the formal period of education, stimulate inquisitiveness as well as appreciation? We have yet to hear of a good modern college building which is not acclaimed by the students and faculty who use it, or who have seen proposed designs. Its substance is a challenge to their imaginations. Familiarity breeds not only acceptance but understanding as well, understanding that unless a college building expresses in its architecture the advancement of thought and dissemination of knowledge which are the college's reasons for existence, that building has in some degree failed to achieve its purpose. However well it may perform mechanically and physically, it fails to function philosophically or even spiritually. In a machine age this is a very real danger.

— Frank G. Lopez

Reprints of this study are being forwarded to the heads of approximately 300 colleges and universities, and to others concerned in the architecture of buildings for higher education, to acquaint them with a point of view which has been vehemently and repeatedly expressed by qualified members of the architectural profession.

Left, juncture between old and new Engineering Buildings, The Rice Institute; Staub & Rather, architects.
Right, new classroom building, Mt. Hermon School, Northfield, Mass.; James A. Britton, architect



Dorsey and Peters Photo

COLLEGE BUILDINGS

PLANNED FOR UTMOST CONVENIENCE

Lakeside Dormitory

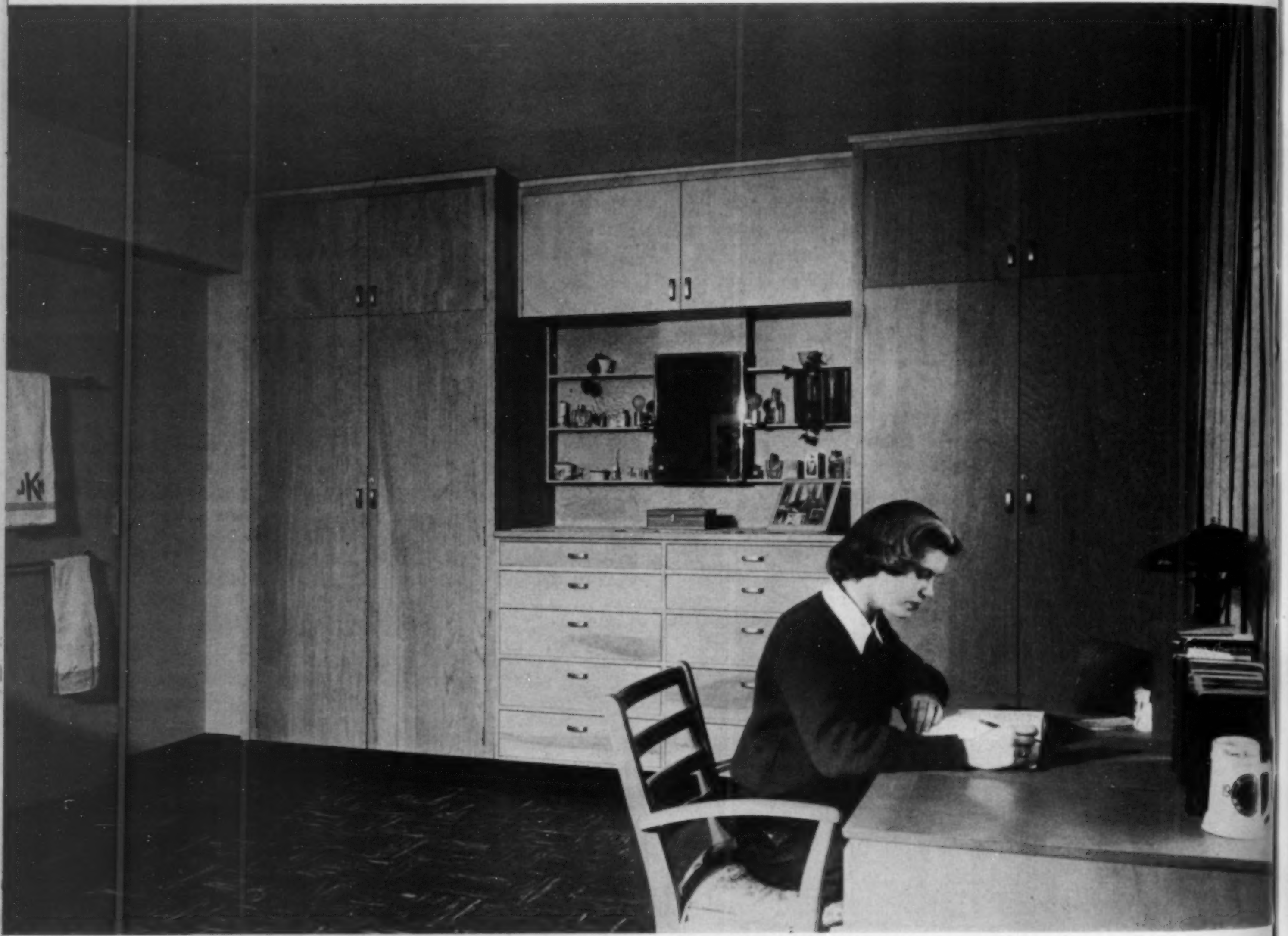
Mt. Holyoke College

South Hadley, Mass.

Office of Douglas Orr

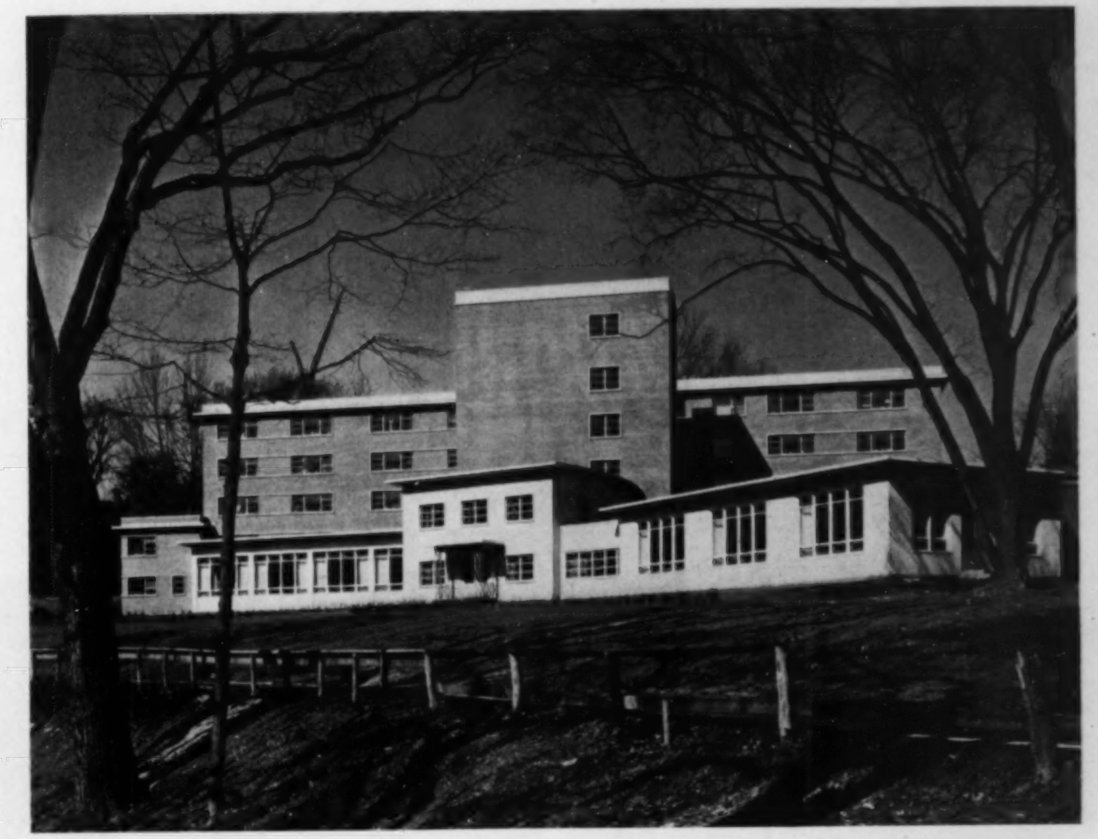
Architect

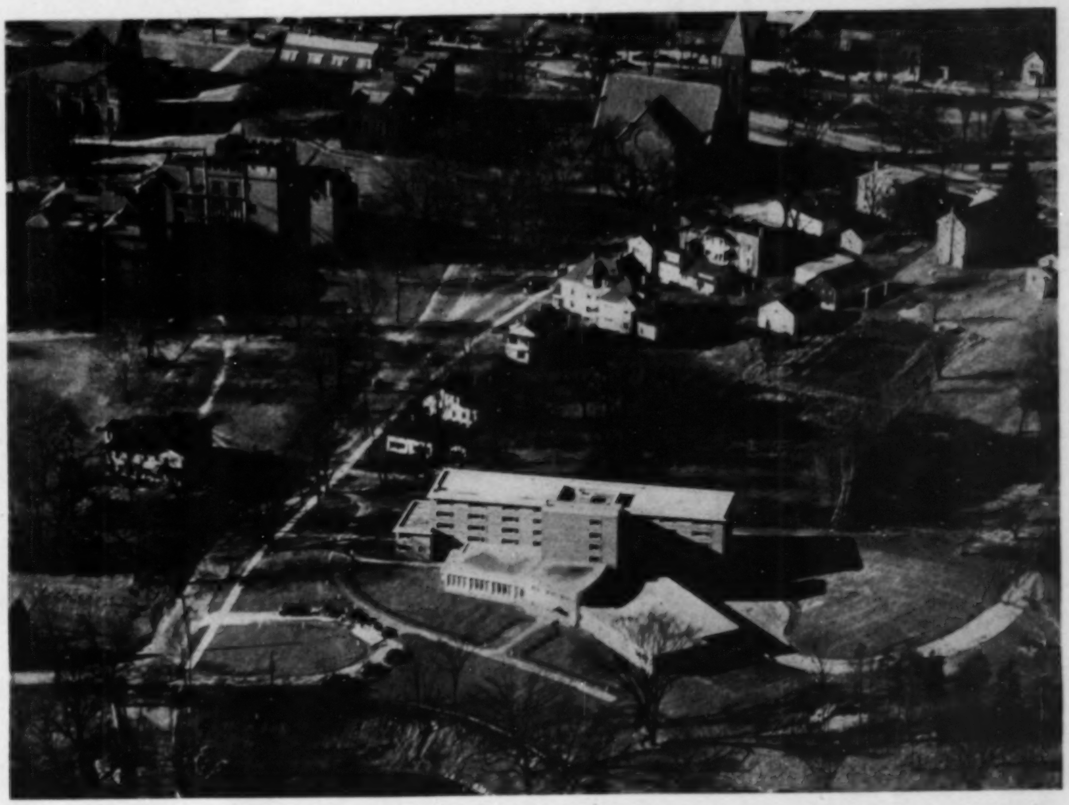
Joseph Molitor Photo



Planned in every detail for the convenience of the girls who occupy it, Lakeside Dormitory was also economical to build. It consists of three units — four-story dormitory block, equally tall washroom unit which contains principal mechanical services, and low lounge-lobby-dining group in foreground. This permitted concentrating expensive mechanical installations and simplified structural design

Joseph Molitor Photo

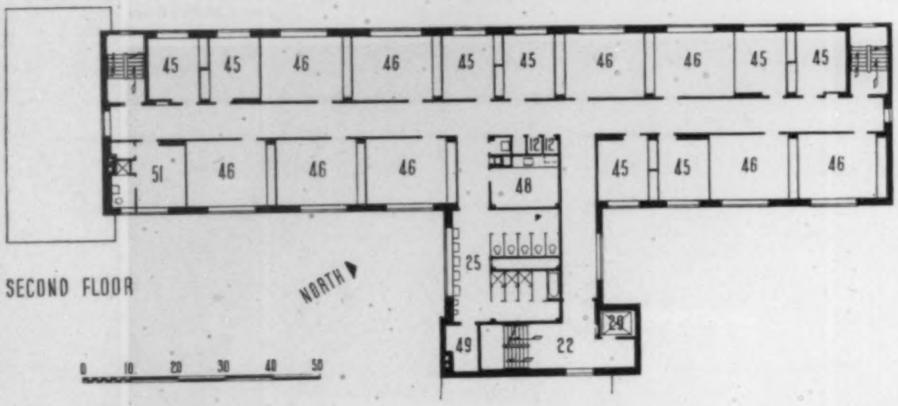


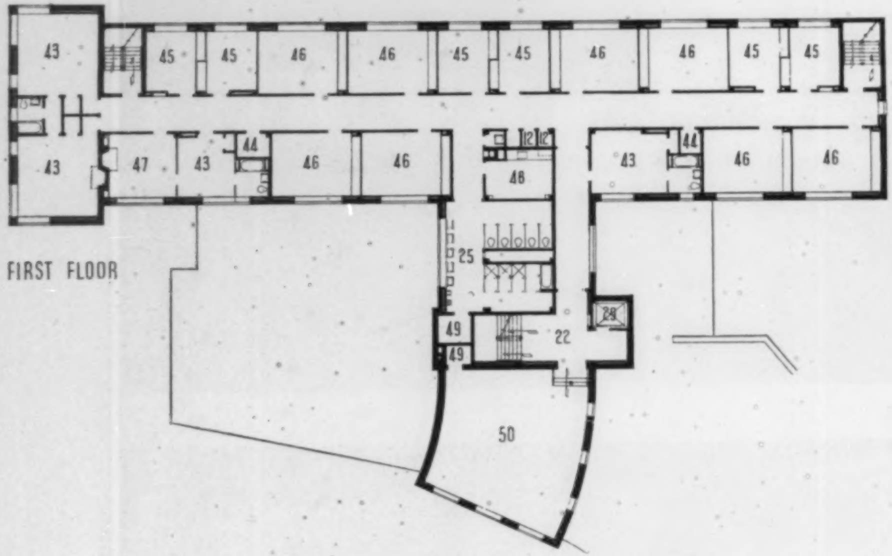


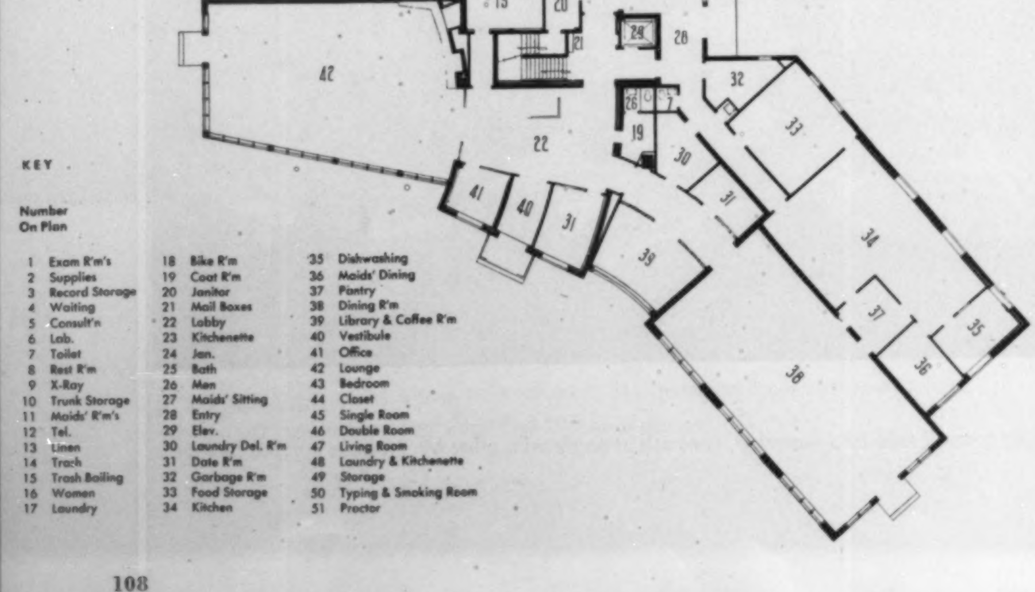
Weitner Aerophoto Service

Lakeside, overlooking a small lake and waterfall, contrasts strongly with other Mt. Holyoke campus buildings

Upper floor plans show sanitary facilities pulled forward of dormitory block, which permitted using repetitive concrete framing and slabs for four-story portions, thus cutting cost; it also keeps bathroom noise out of bedrooms. One-story area is steel-framed. Suites at ends of dormitory floors are for guests. On first floor, Entry (28) handles all services: trunks to and from elevator, food to and garbage from kitchen, girls' laundry and dry cleaning, baled trash and paper. At south end of first floor is a special health unit; building help's rooms are at north end. Wilcox, Erickson and Pfisterer were structural engineers


SECOND FLOOR
NORTH
0
10
20
30
40
50
45
46
51
48
25
49
22
29
12


FIRST FLOOR
43
44
45
46
47
48
25
49
22
29
12
50

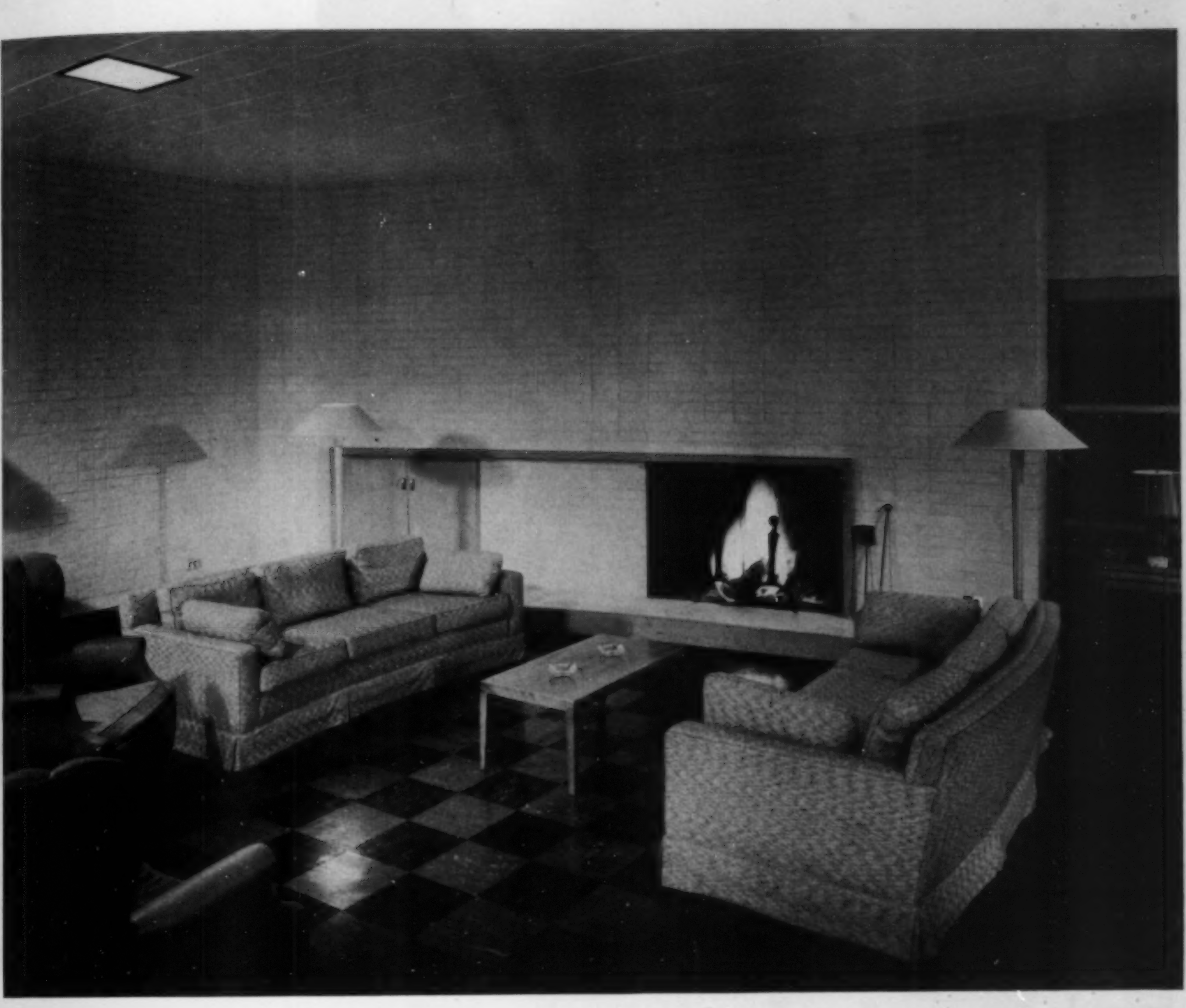

MAIN FLOOR
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42

KEY

Number On Plan	
1	Exam R'm's
2	Supplies
3	Record Storage
4	Waiting
5	Consult'n
6	Lab.
7	Toilet
8	Rest R'm
9	X-Ray
10	Trunk Storage
11	Maids' R'm's
12	Tel.
13	Linen
14	Trash
15	Trash Boiling
16	Women
17	Laundry
18	Bike R'm
19	Coat R'm
20	Janitor
21	Mail Boxes
22	Lobby
23	Kitchenette
24	Jan.
25	Bath
26	Men
27	Maids' Sitting
28	Entry
29	Elev.
30	Laundry Del. R'm
31	Date R'm
32	Garbage R'm
33	Food Storage
34	Kitchen
35	Dishwashing
36	Maids' Dining
37	Pantry
38	Dining R'm
39	Library & Coffee R'm
40	Vestibule
41	Office
42	Lounge
43	Bedroom
44	Closet
45	Single Room
46	Double Room
47	Living Room
48	Laundry & Kitchenette
49	Storage
50	Typing & Smoking Room
51	Proctor

Bike entrance handles much traffic

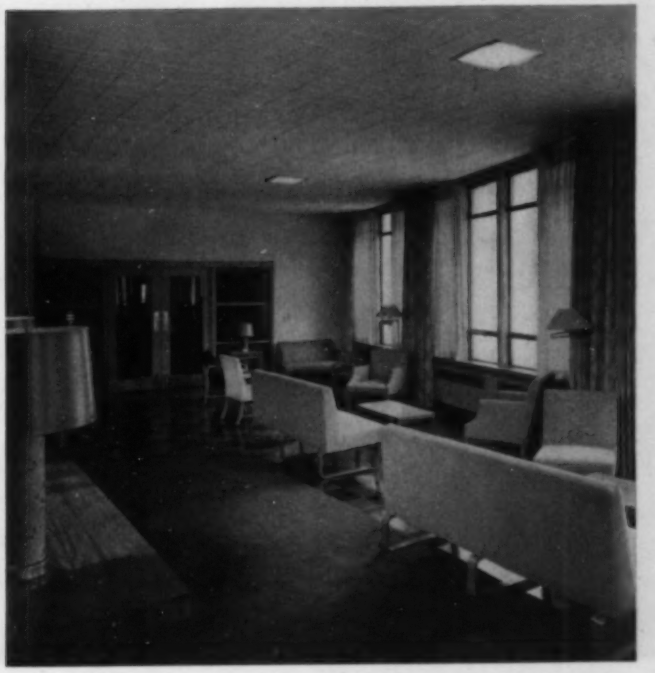
Lobby

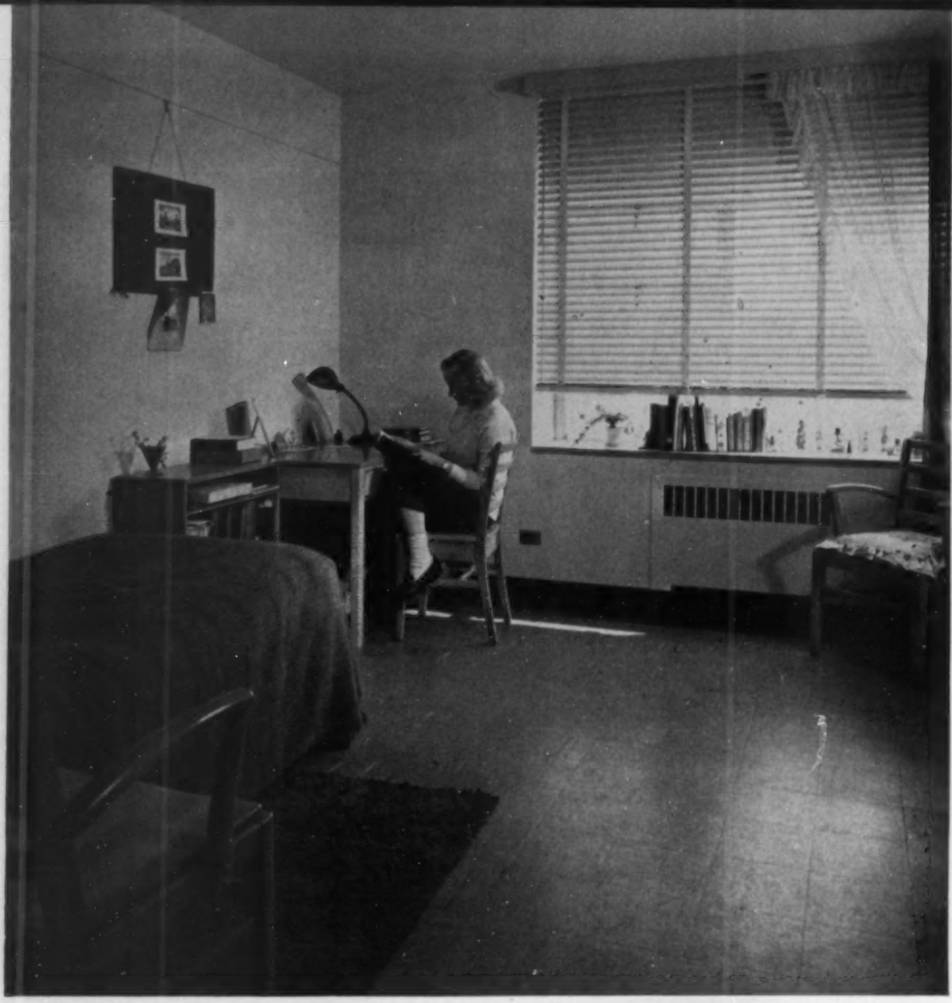


Fireplace end of Lounge

Joseph Molitor Photos

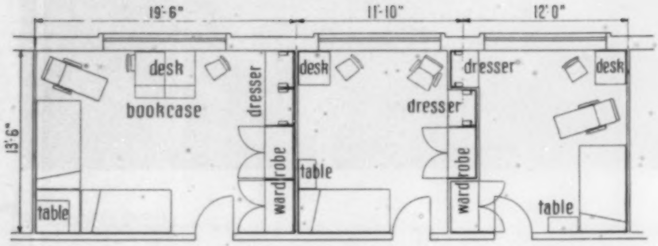
Lounge, looking toward Lobby



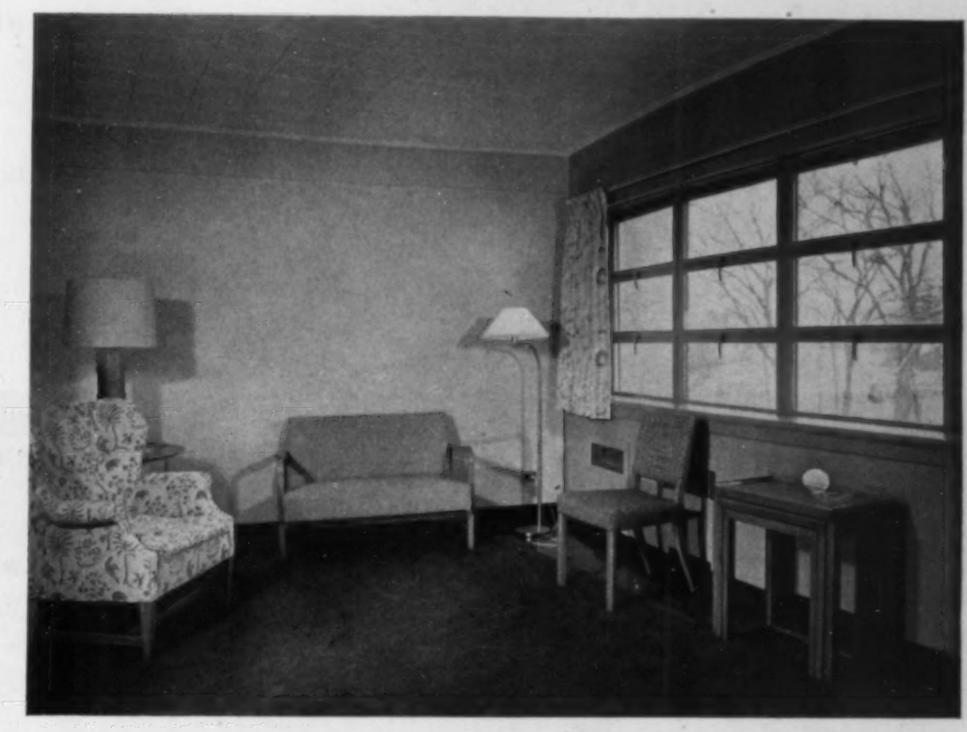


LAKESIDE DORMITORY

Joseph Molitor Photos

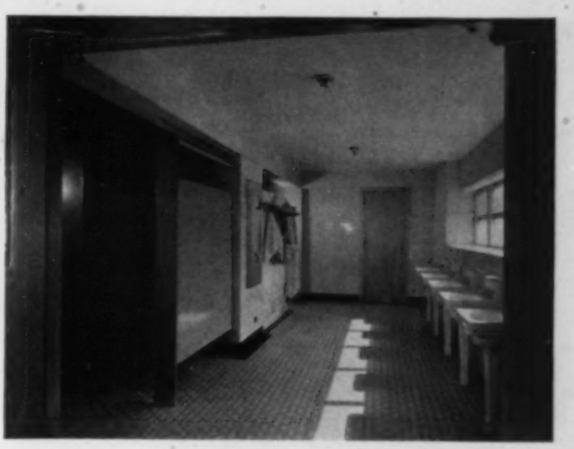

19'-6"
11'-10"
12'0"
13'6"
desk
bookcase
dresser
wardrobe
table
desk
dresser
table
wardrobe
dresser
desk
table

Use of built-in wardrobes between dormitory rooms cut down amount of partitioning, saved on over-all length of structure and on plastering. Typical room and dormitory corridor are shown above: floors are asphalt tile, walls plaster, ceilings concrete, rubbed and painted. Below, left, is Dining Room, from which there is a pleasant view over the lake. Center, second-floor Smoking and Typing Room

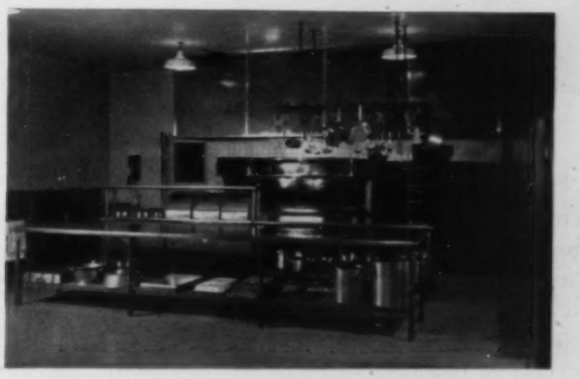


In Library and Coffee Room groups gather on way to meals

Walls of the building are select common brick backed up with cinder block; metal work is lead-coated copper; roof is built up; insulation is glass fiber. Lounge walls are finished in birch panelling and brick; other walls are painted plaster. Windows are steel. Floors are terrazzo in lobby and kitchen, rubber tile in public area; kitchen walls are tiled. Service yard has radiant heat for snow melting



Typical washroom serves each dormitory floor



Food comes to the kitchen from the college Commissary

DORMITORY CONTAINS TWO-ROOM APARTMENTS

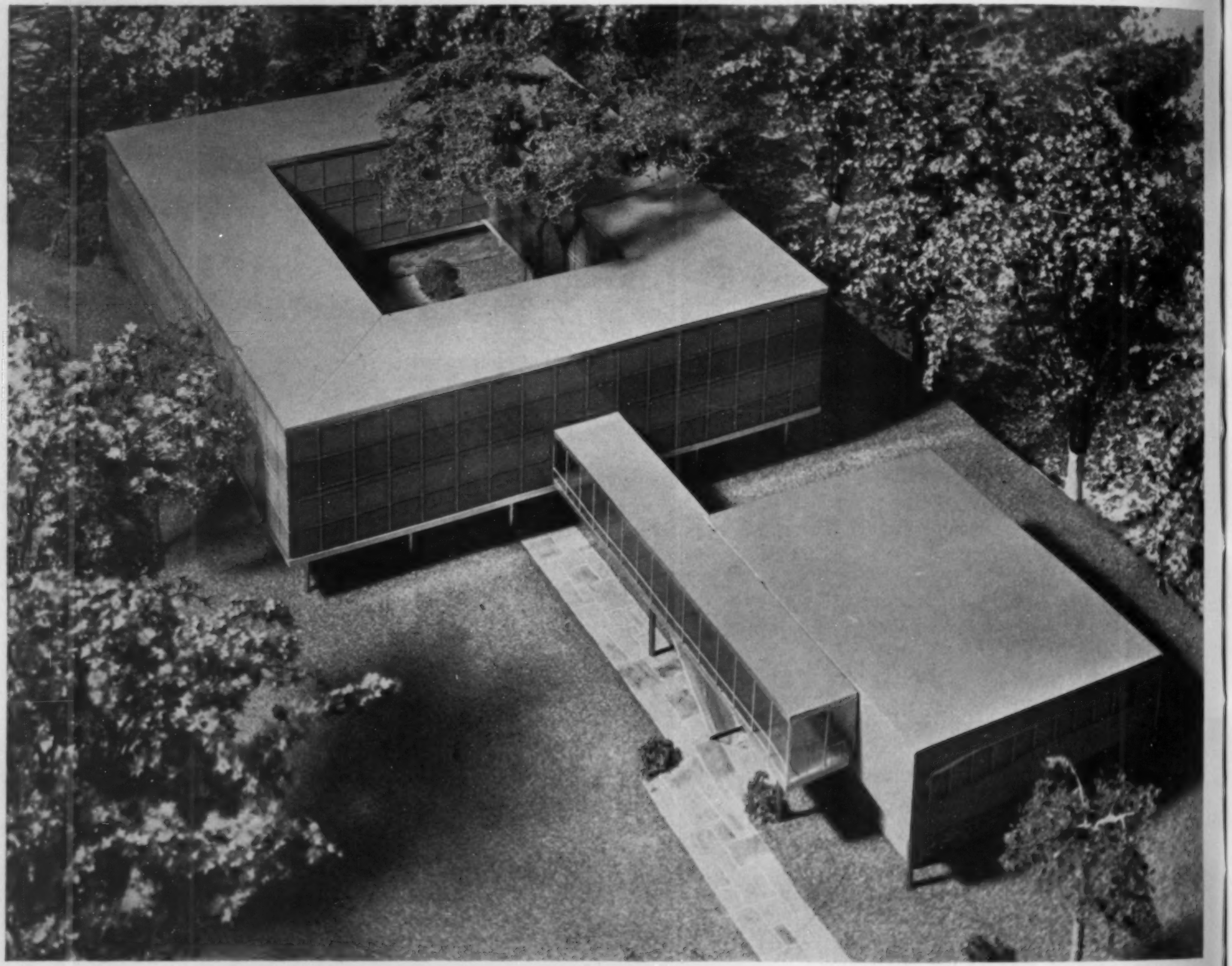
PREP SCHOOL BUILDING

Kiskiminetas Springs School

Saltsburg, Pa.

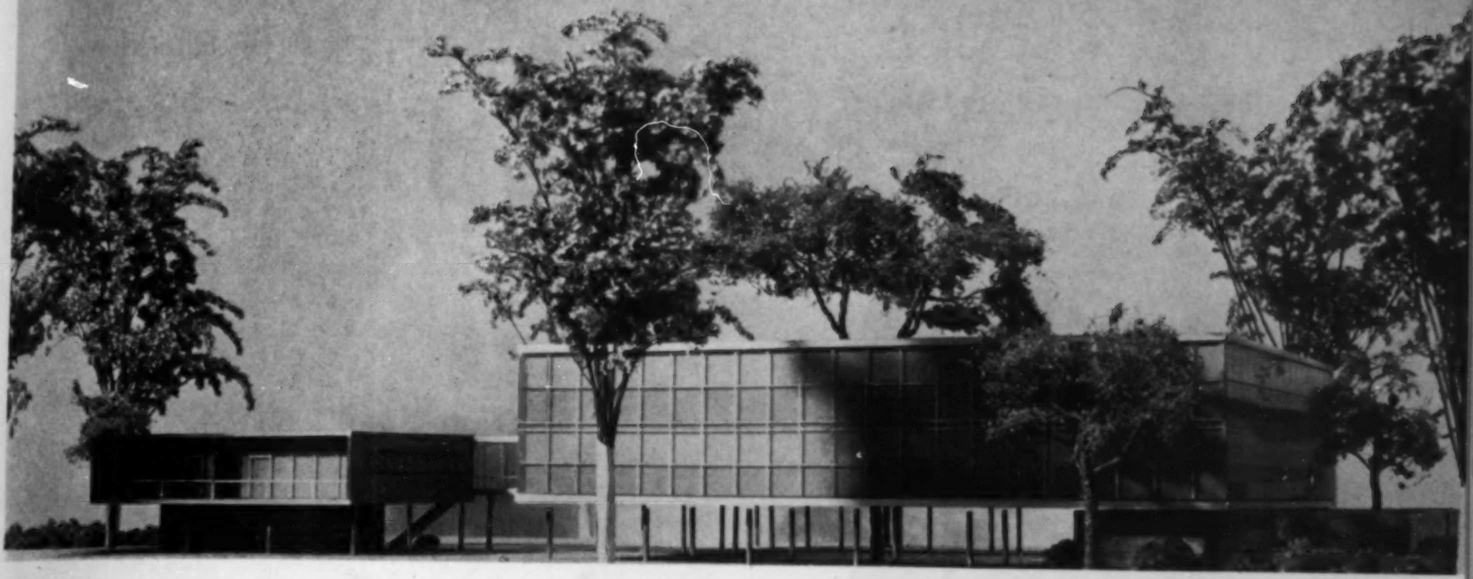
Hunter, Caldwell & Campbell

Architects

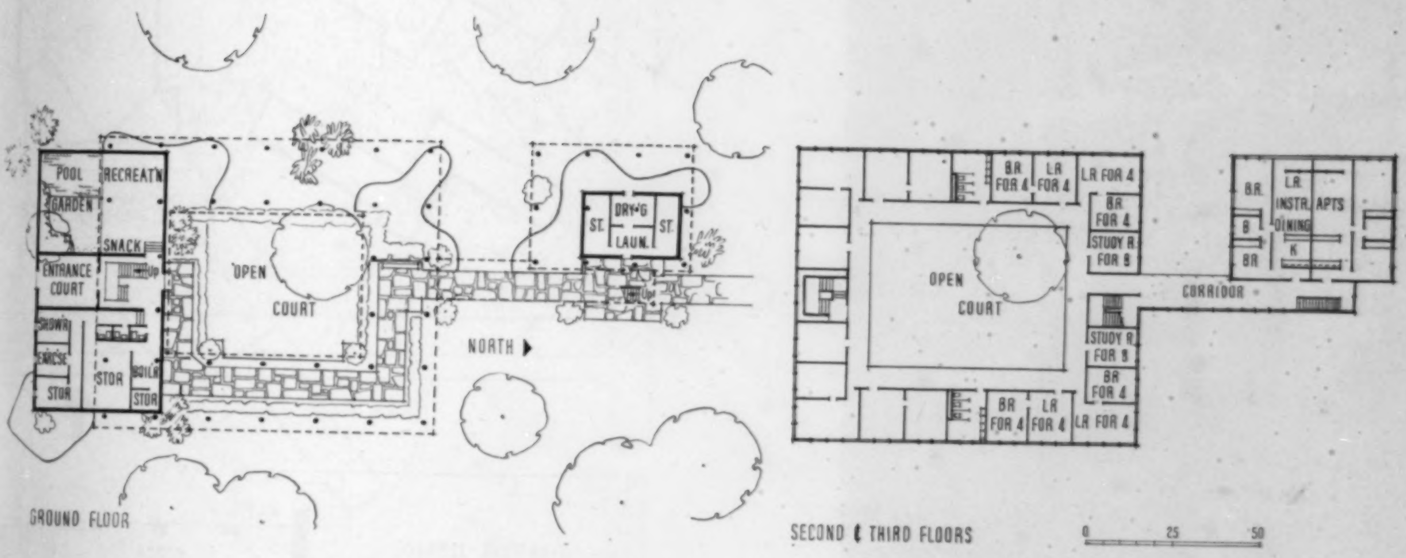


Model by Conrad; photos, Don Metz

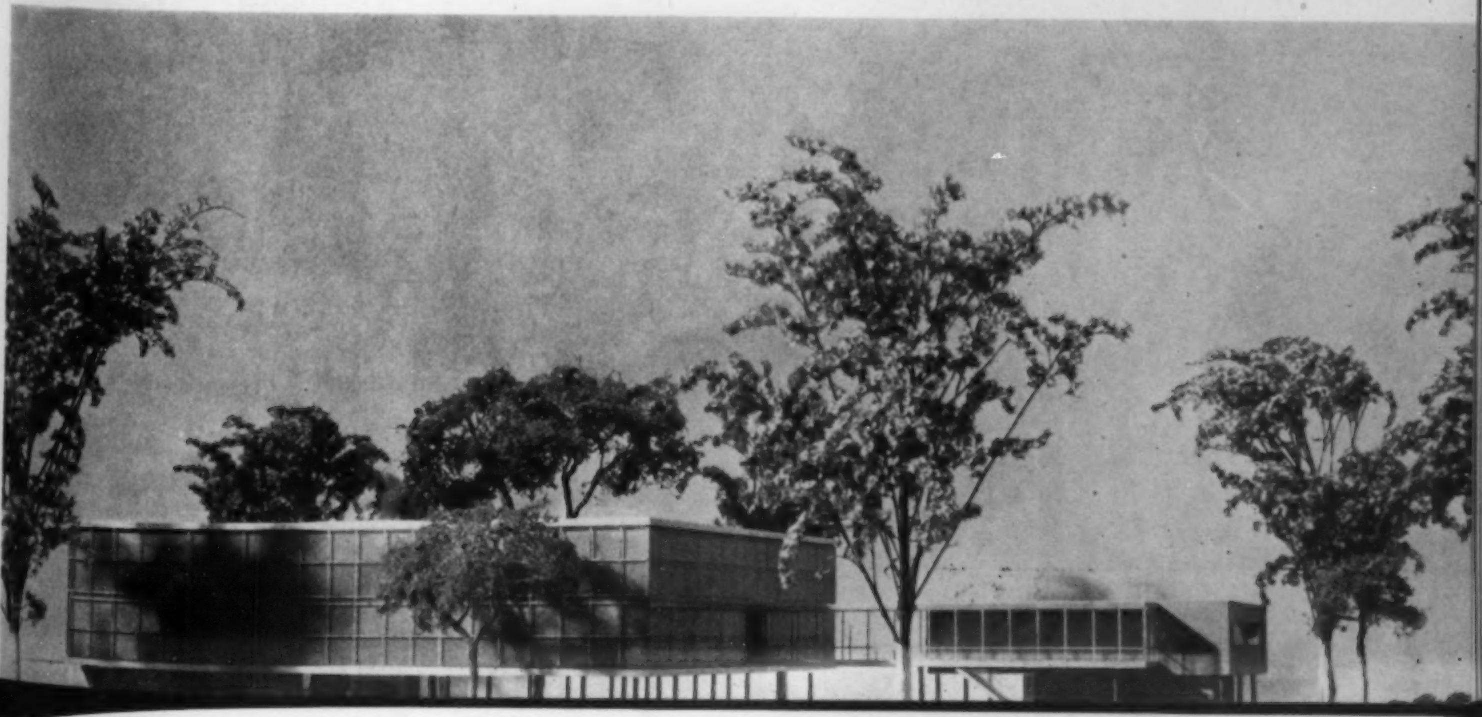
Although this is a dormitory for a preparatory school, so well does its architecture reflect the school's teaching methods that it has much to contribute to this study. In Kiski only one subject is taught at a time, with a review period in spring. "Homework" is done during study hours. Under construction, this is the first of six dormitories; the campus will also have a new field house, chapel, dining hall. Each dorm has apartments for 64 boys, and for two married and two bachelor teachers.



Construction: light steel frame, radiant-heated concrete floors, exterior walls all glass


POOL
RECREAT'N
GARDEN
SNACK
ENTRANCE COURT
UP
SHOWR
EXRCSE
STOR
STOR
BOILR
STOR
OPEN COURT
ST.
DRY'G
ST.
LAUN.
UP
NORTH
GROUND FLOOR
B.R. FOR 4
L.R. FOR 4
L.R. FOR 4
B.R. FOR 4
STUDY R. FOR 8
OPEN COURT
CORRIDOR
STUDY R. FOR 8
B.R. FOR 4
B.R. FOR 4
L.R. FOR 4
L.R. FOR 4
B.R.
B
B.R.
L.R.
INSTR. APTS
DINING
K
SECOND & THIRD FLOORS
0
25
50

Design, to exploit fully the beautiful site, necessitated extensive study of spandrel wall construction



POSTWAR DORMITORY GROUP

COLLEGE BUILDINGS

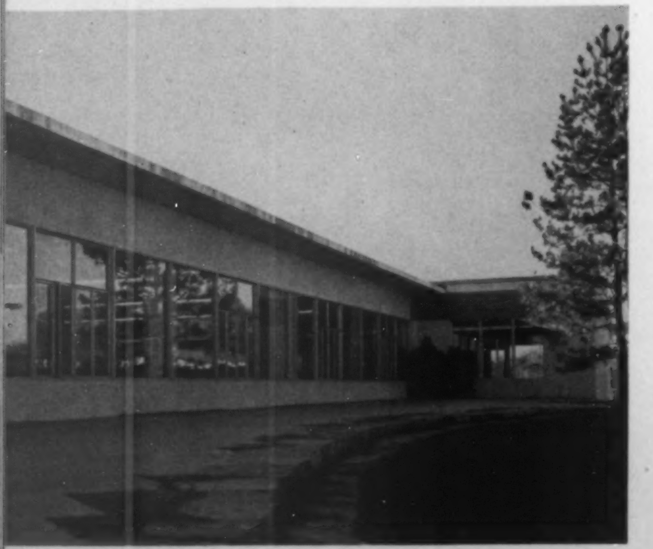
Rogers Center Residence Halls

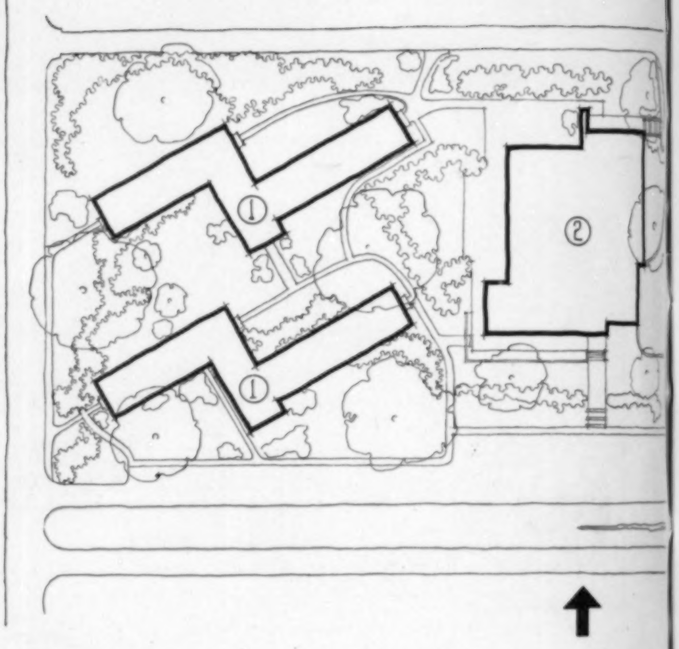
Indiana University

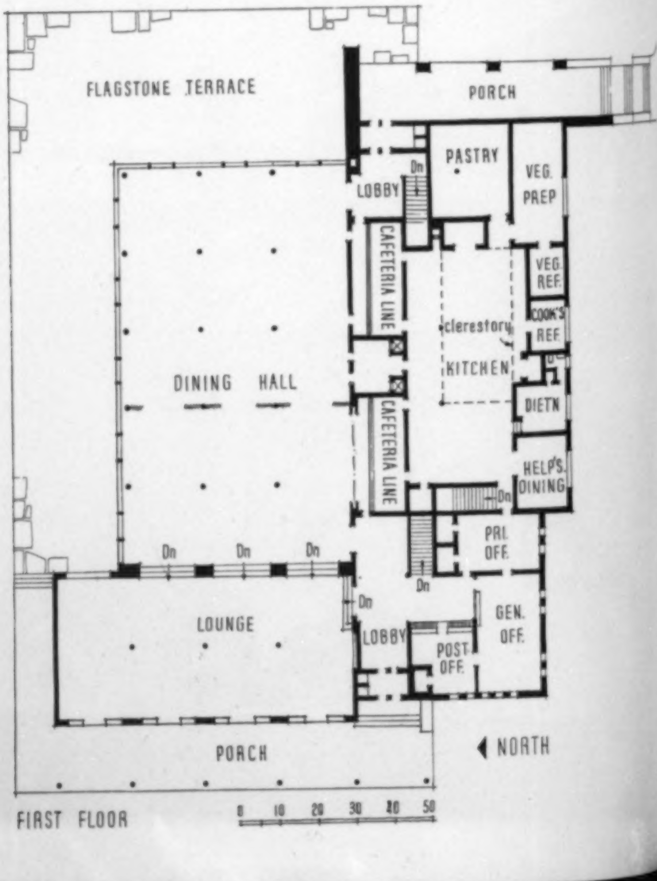
Bloomington, Indiana

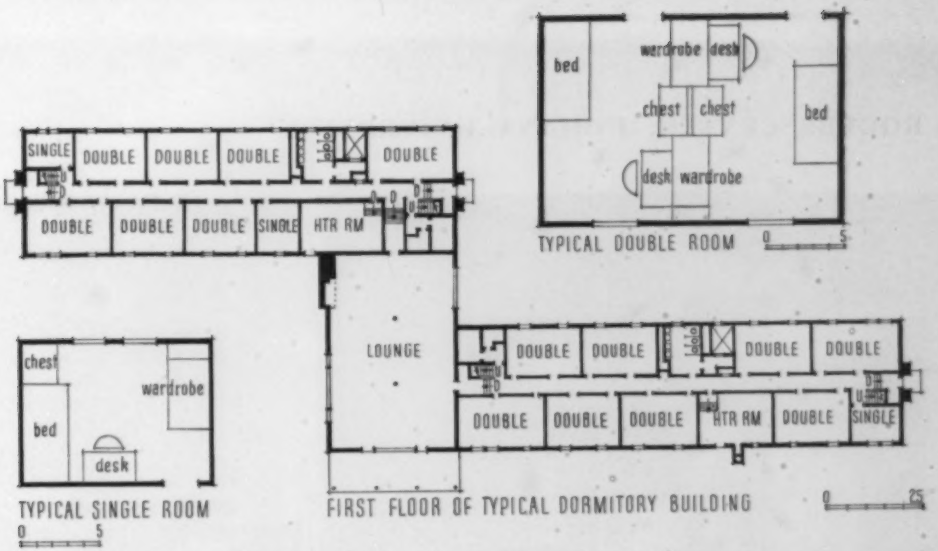
Edward D. James

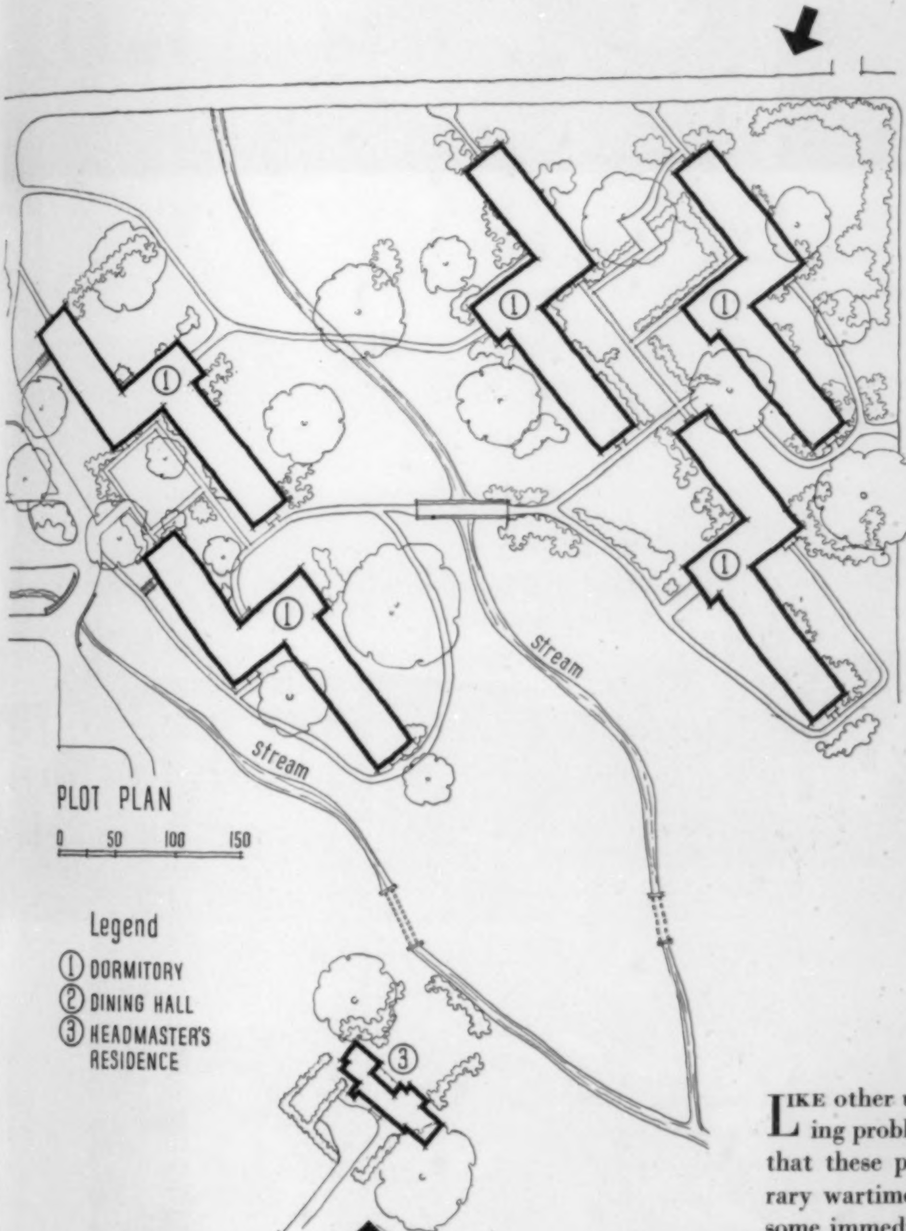
Architect

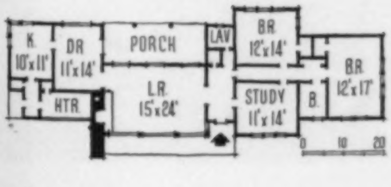




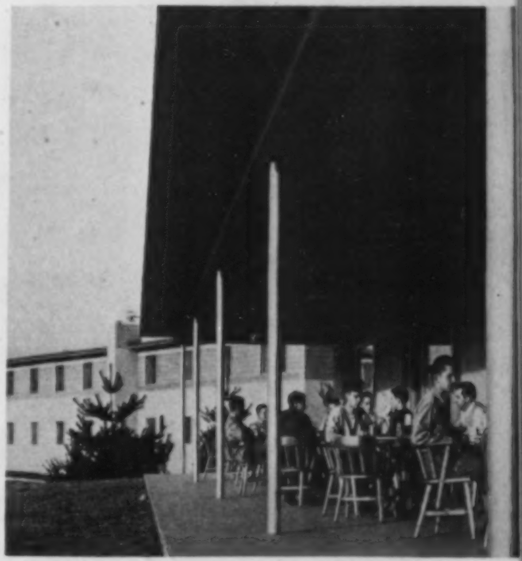

FLAGSTONE TERRACE
PORCH
PASTRY
VEG. PREP
LOBBY
Dn
CAFETERIA LINE
VEG. REF.
clerestory
COOK'S REF
KITCHEN
DINING HALL
DIETN
CAFETERIA LINE
HELP'S DINING
PRI. OFF.
Dn
Dn
Dn
Dn
LOUNGE
GEN. OFF.
LOBBY
POST OFF.
PORCH
NORTH
FIRST FLOOR
0 10 20 30 40 50


bed
wardrobe
desk
chest
chest
bed
desk
wardrobe
TYPICAL DOUBLE ROOM
0 5
SINGLE
DOUBLE
DOUBLE
DOUBLE
DOUBLE
DOUBLE
DOUBLE
DOUBLE
SINGLE
HTR RM
LOUNGE
DOUBLE
DOUBLE
DOUBLE
DOUBLE
DOUBLE
DOUBLE
DOUBLE
HTR RM
DOUBLE
SINGLE
chest
wardrobe
bed
desk
TYPICAL SINGLE ROOM
0 5
FIRST FLOOR OF TYPICAL DORMITORY BUILDING
0 25

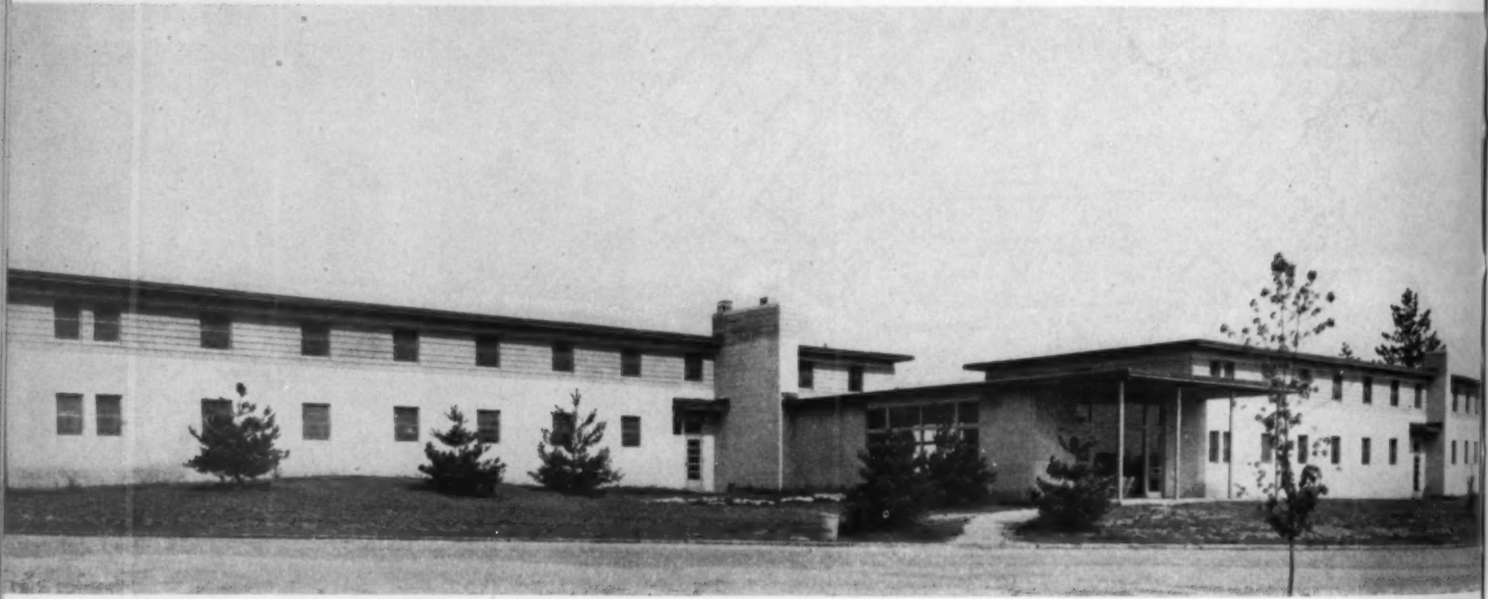

1
1
1
1
1
stream
stream
3
PLOT PLAN
0 50 100 150
Legend
① DORMITORY
② DINING HALL
③ HEADMASTER'S RESIDENCE


K. 10'x11'
DR 11'x14'
PORCH
LAV
BR 12'x14'
BR 12'x17'
LR 15'x24'
STUDY 11'x14'
HTR
B
0 10 20

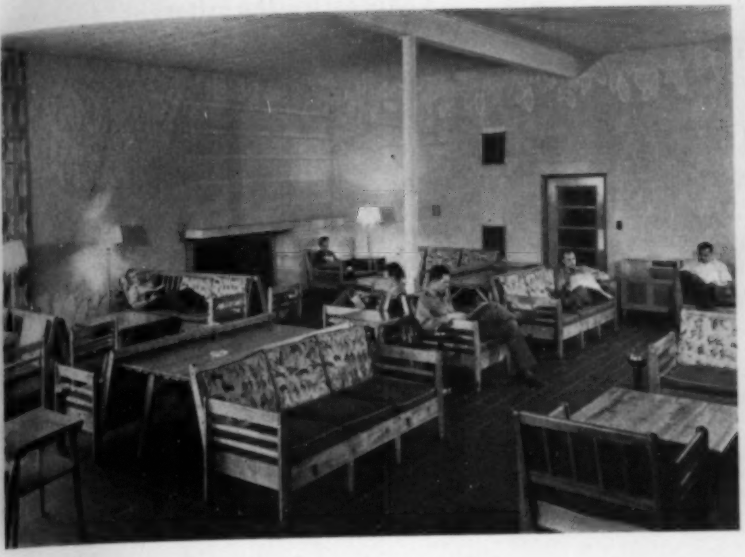
Typical hall (above): two-story wings, one-story lounge between. Doubled up, Center has housed 980 men students; central dining hall (facing page) has fed 1700 per meal

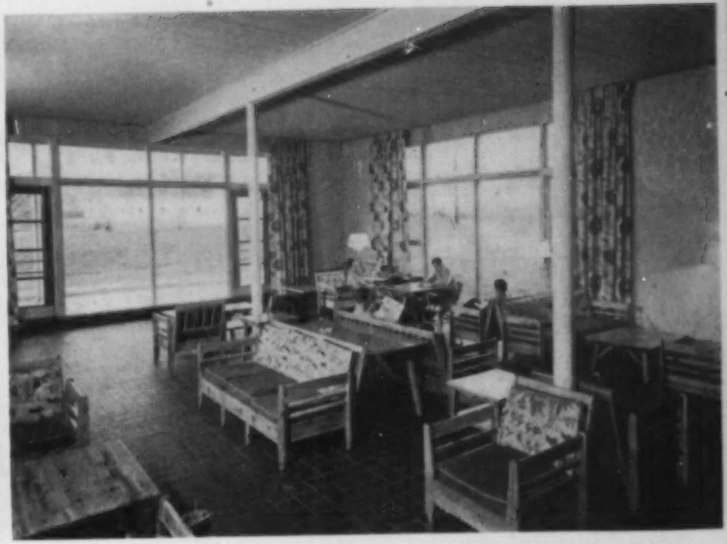


LIKE other universities, Indiana had tremendous housing problems after World War II, and it was realized that these problems would change. Converted temporary wartime structures and a trailer village answered some immediate demands, but permanent housing was also needed. Large, more conventional dormitories were started; yet these took time. A graduate center would be needed soon. Hence Rogers was built for use at double capacity during the postwar peak; it is now in process of conversion to graduate student housing. The first three units of Rogers Center were occupied seven months after design started.

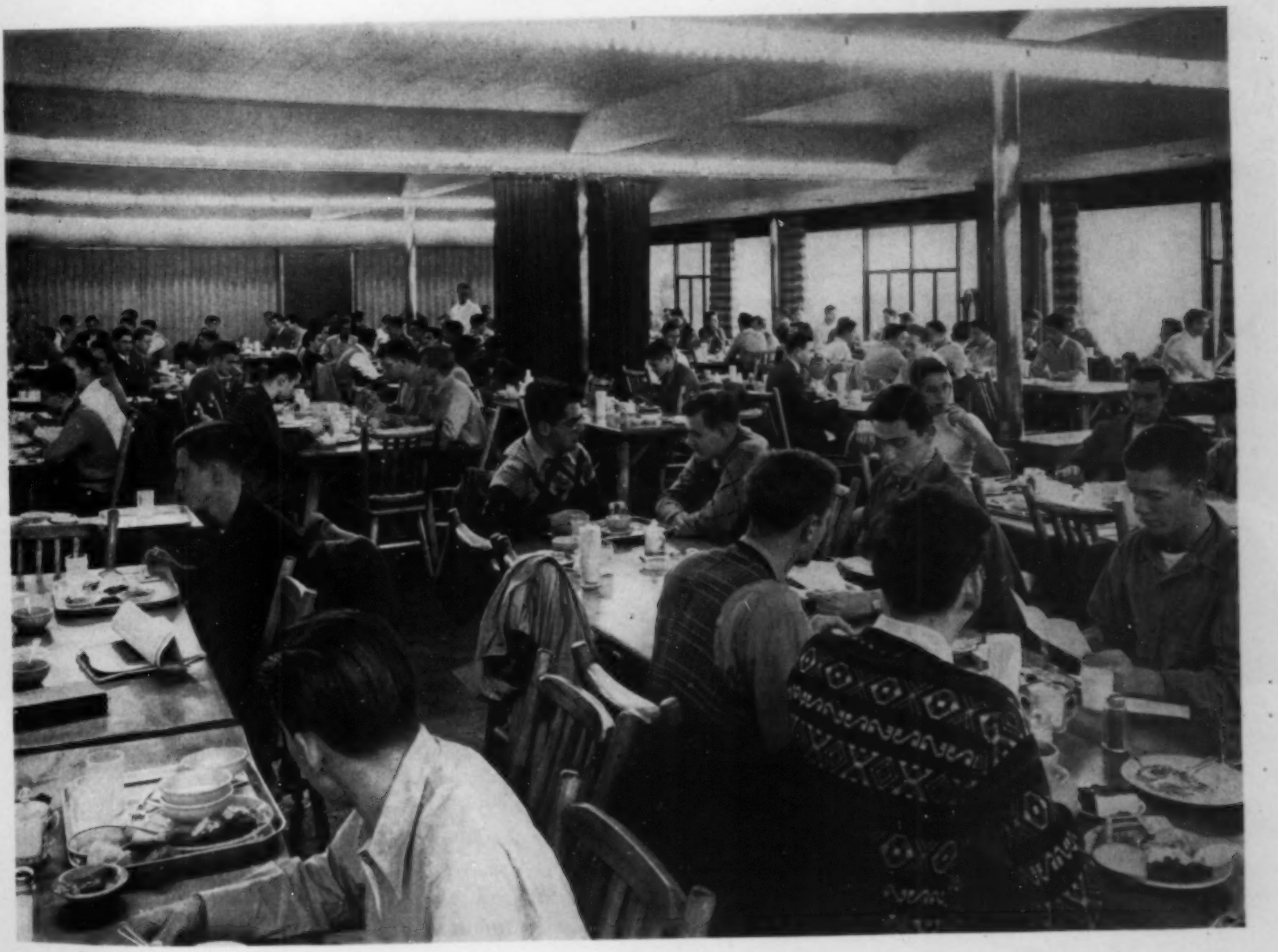


The halls' roofs and floors are precast concrete; walls are cement block painted warm buff with second stories cement brick, painted terra cotta. Interiors are exposed cement block painted in various colors; floors, asphalt tile and quarry tile; ceilings in general areas, acoustic tile. Lights are fluorescent; air for heating is warmed by steam from the University plant. Cost was low: including furnishings and at doubled capacity, $1500 per student. E. P. Bardwell represented the University as postwar planning coordinator; Frits Loonsten was landscape architect; Ammerman, Davis & Stout were mechanical engineers.





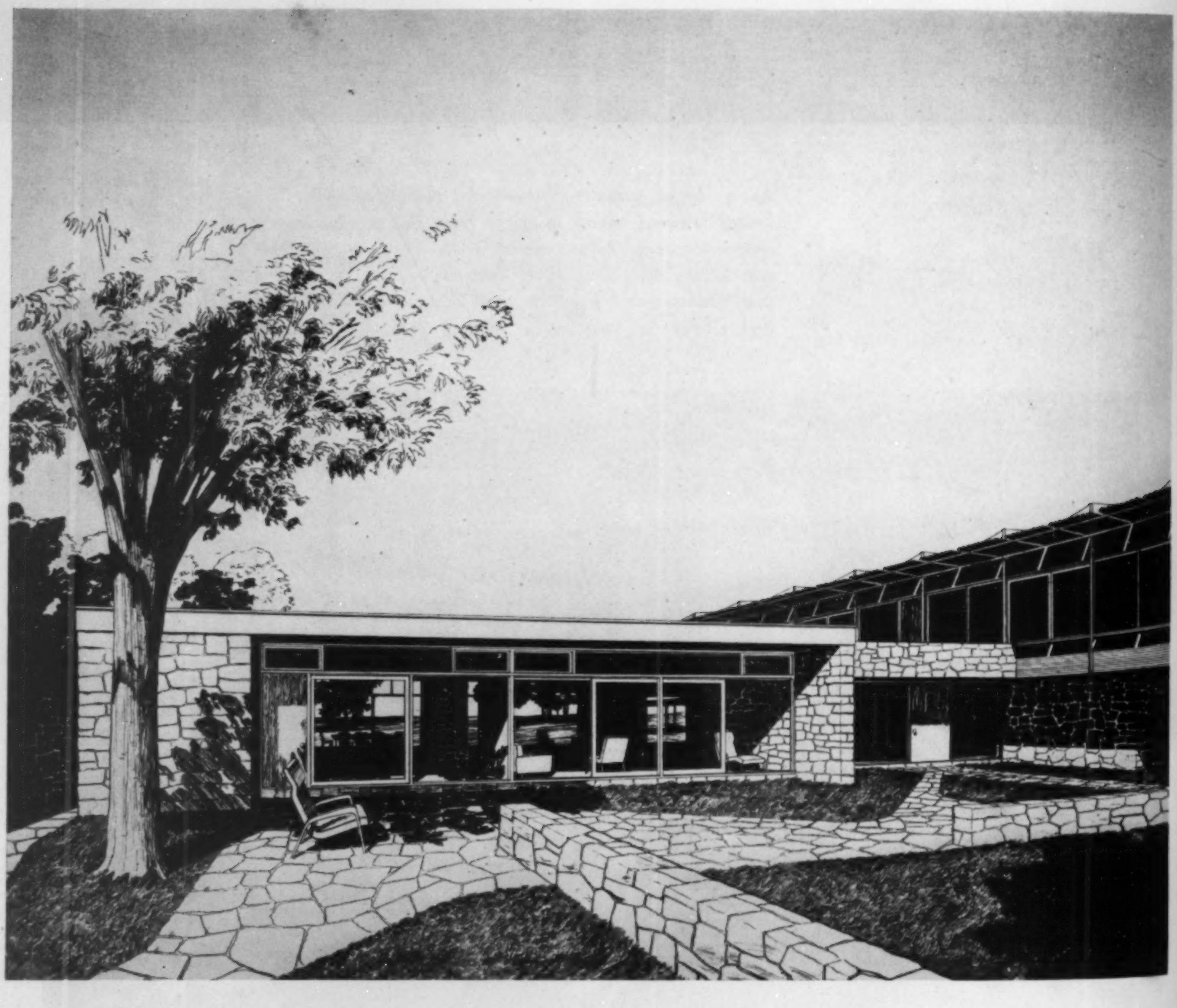
Above, facing page, two dormitories seen from dining hall terrace; exterior, typical residence hall. This page, interiors, residence lounge. Below, central dining room, on two levels with folding partition so lower level can become lounge. The small, basementless buildings have proved very comfortable and efficient as well as economical and quick to build



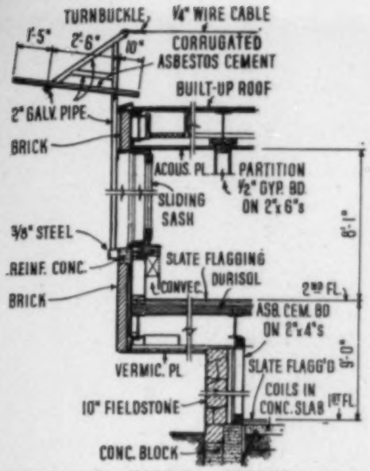
FOR PRACTICE IN HOUSEKEEPING

Cooperative Dormitory
Vassar College
Poughkeepsie, N. Y.

Marcel Breuer
Architect

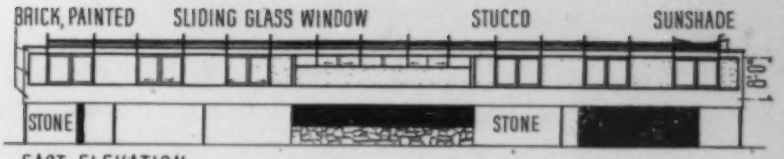


VASSAR, of high reputation as a women's college, has little place in its curriculum for the domestic arts. Its Cooperative Dormitory has been fulfilling that function for some time; residents literally run their own household, ordering, cooking, cleaning, washing, etc. The Co-op is extremely popular, but until recently it was housed in an old converted building, somewhat isolated, so that Co-op girls felt somewhat out of things. To integrate the Co-op more completely with the college, its new building is being started for occupancy next fall.

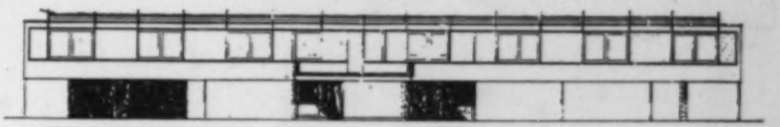

TURNBUCKLE
1/4" WIRE CABLE
1'-5"
2'-6"
10"
CORRUGATED ASBESTOS CEMENT
BUILT-UP ROOF
2" GALV. PIPE
BRICK
ACOUS. PL.
PARTITION 1/2" GYP. BD. ON 2"x 6"s
SLIDING SASH
8'-1"
3/8" STEEL
REINF. CONC.
SLATE FLAGGING
CONVEC.
DURISOL
BRICK
2ND FL.
ASB. CEM. BD. ON 2"x 4"s
VERMIC. PL.
9'-0"
SLATE FLAGG'G
COILS IN CONC. SLAB
1ST FL.
10" FIELDSTONE
CONC. BLOCK

TYPICAL WALL SECTION · BEDROOM WING

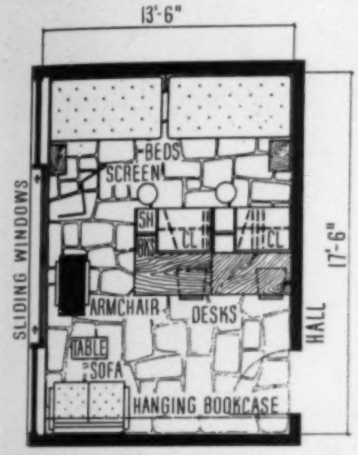
0 1 2 3 4 5 FT


BRICK, PAINTED
SLIDING GLASS WINDOW
STUCCO
SUNSHADE
6'-0"
STONE
STONE

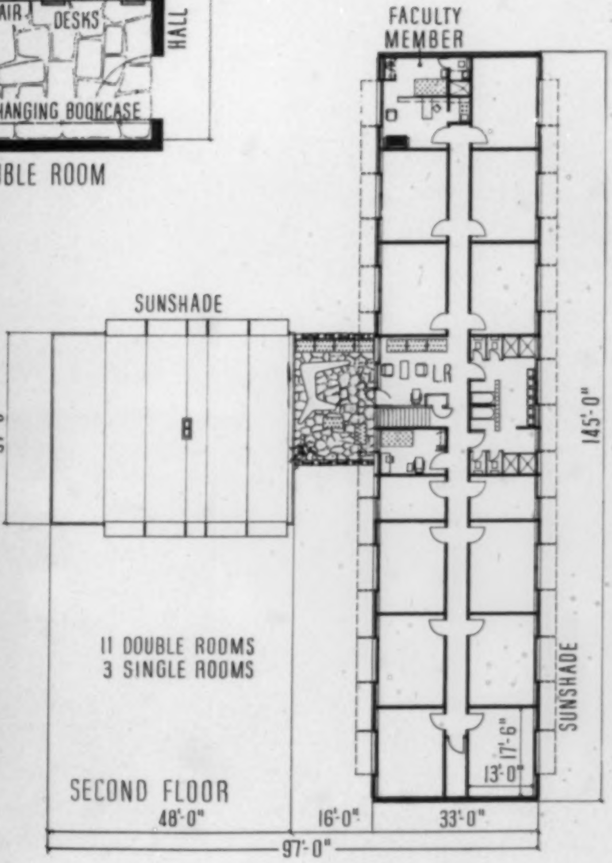
EAST ELEVATION

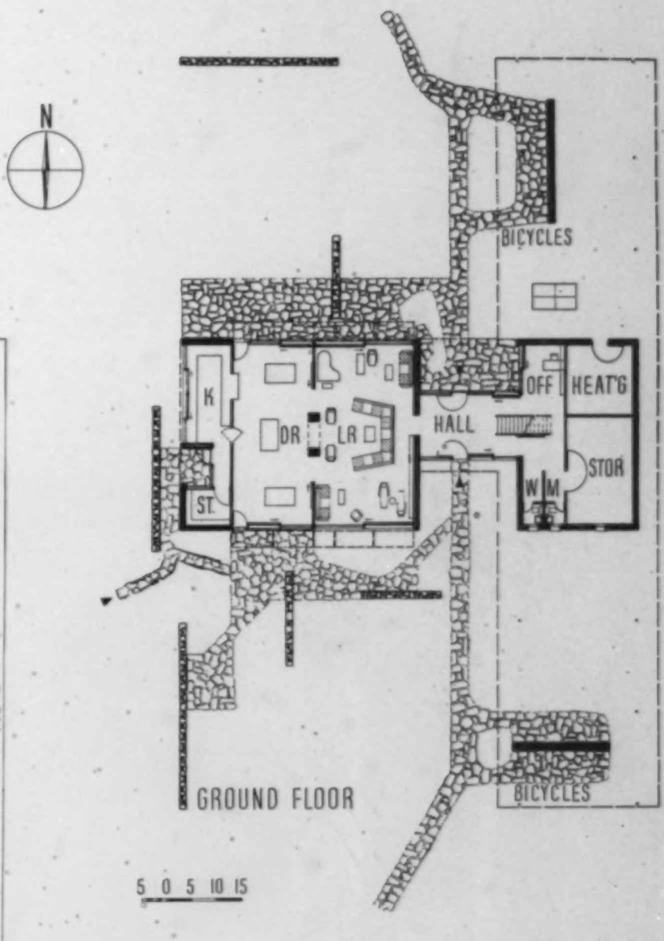


WEST ELEVATION

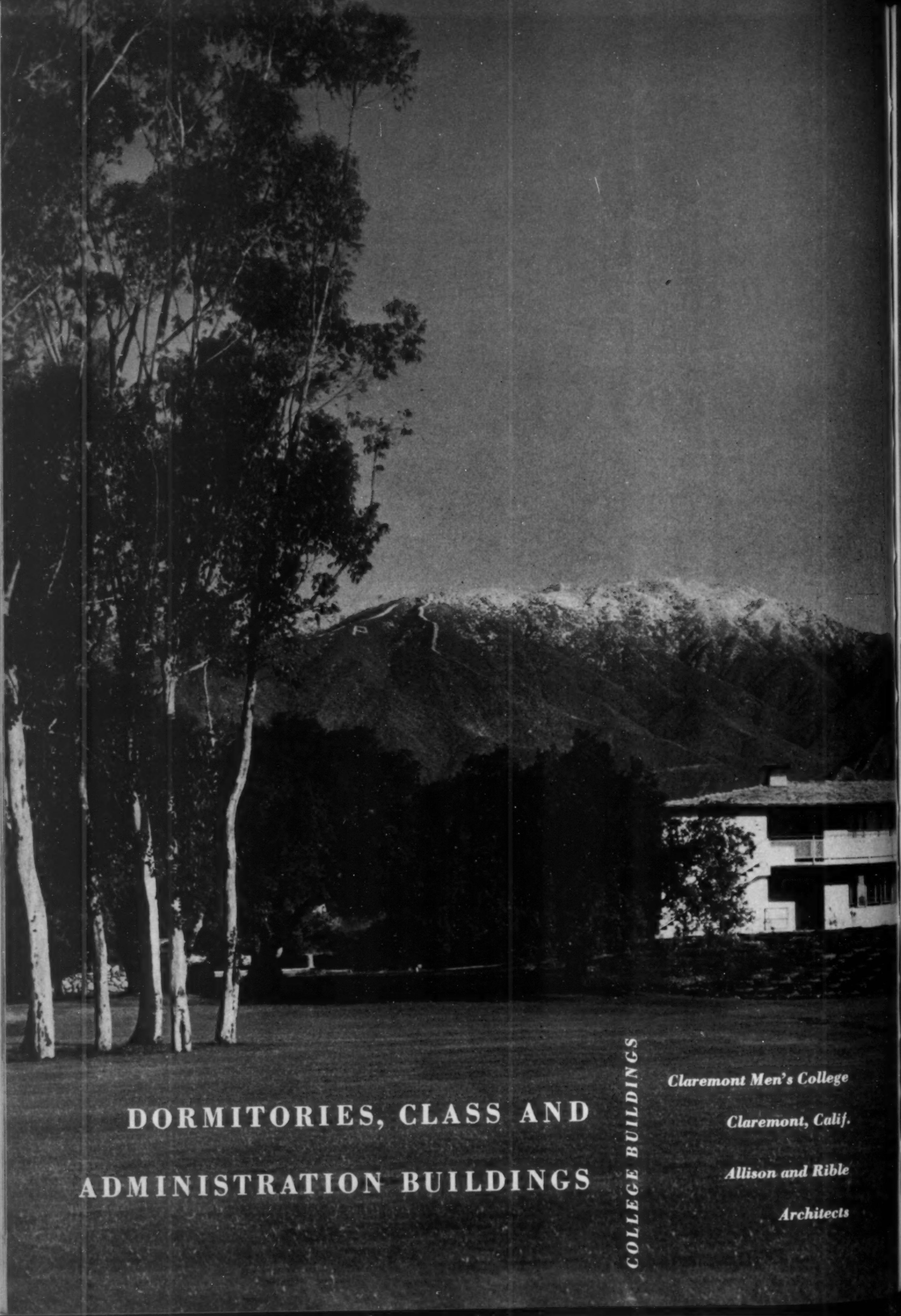

13'-6"
BEDS
SCREEN
SH
CL
CL
BKS
ARMCHAIR
DESKS
TABLE
SOFA
HANGING BOOKCASE
SLIDING WINDOWS
HALL
17'-6"

TYPICAL DOUBLE ROOM


FACULTY MEMBER
SUNSHADE
LR
37'-0"
145'-0"
11 DOUBLE ROOMS
3 SINGLE ROOMS
SUNSHADE
17'-6"
13'-0"
SECOND FLOOR
48'-0"
16'-0"
33'-0"
97'-0"


N
BICYCLES
K
DR
LR
HALL
OFF
HEAT'G
ST.
W M
STOR
BICYCLES
GROUND FLOOR
5 0 5 10 15

Construction, as the details indicate, is quite simple. The dormitory proper is elevated to preserve excellent views across the campus at ground level, and to reduce foundation costs. The decision to employ contemporary architecture was made by college authorities and the donor; it was handed to the architect as a prerequisite. The preliminary drawings have excited much favorable comment among faculty and students, despite the fact that almost all the rest of the campus is solidly traditional



DORMITORIES, CLASS AND ADMINISTRATION BUILDINGS

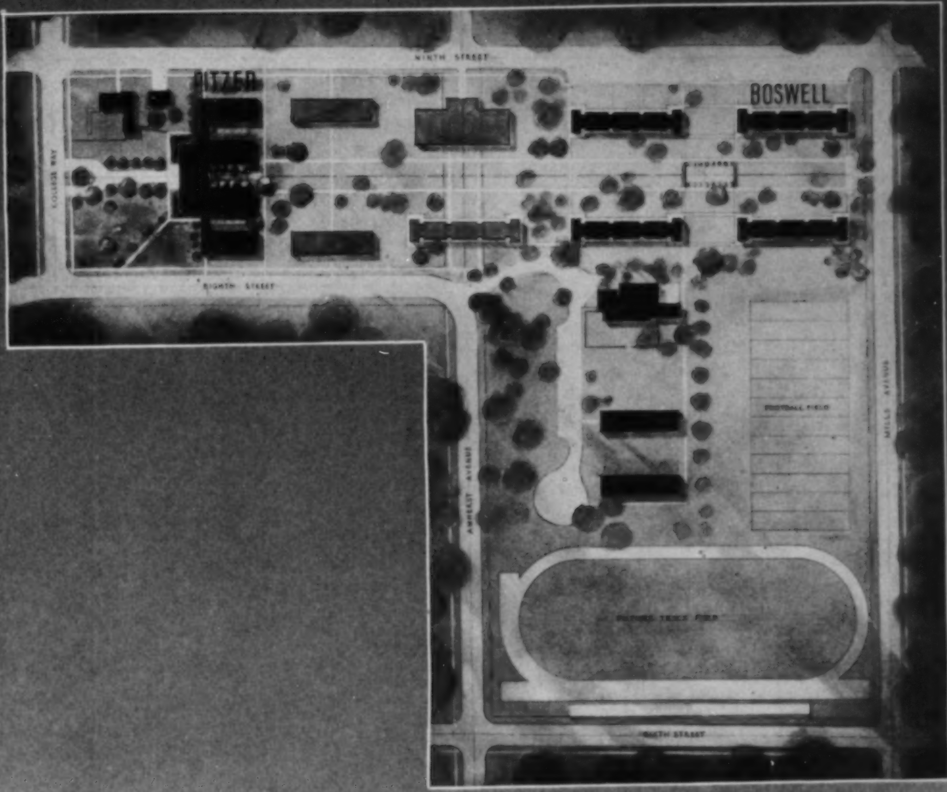
COLLEGE BUILDINGS

Claremont Men's College

Claremont, Calif.

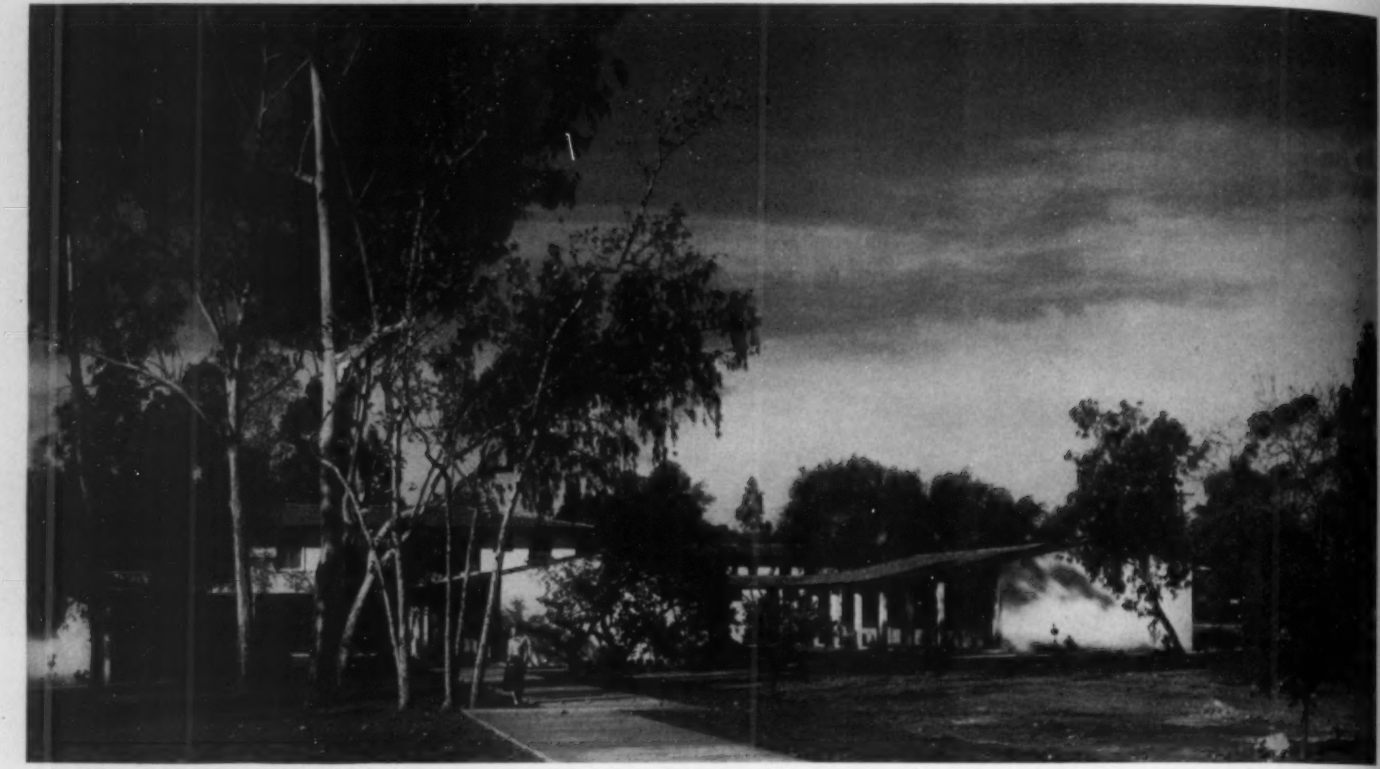
Allison and Rible

Architects

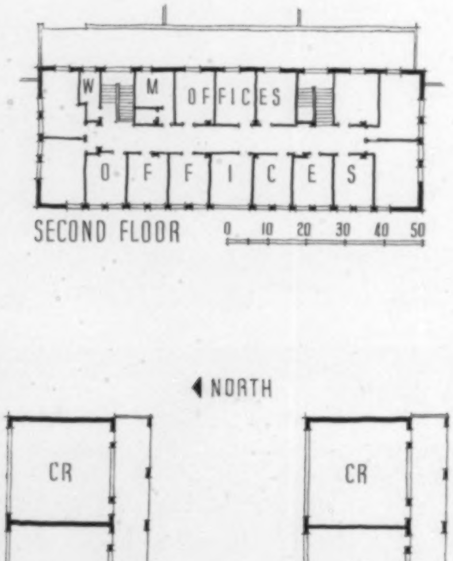

NINTH STREET
PITZER
BOSWELL
COLLEGE WAY
EIGHTH STREET
AMHERST AVENUE
FOOTBALL FIELD
MILLS AVENUE
TRACK FIELD
SIXTH STREET

Dormitory: Boswell Hall

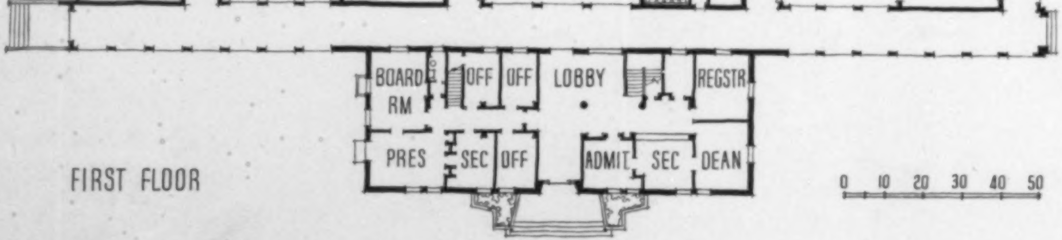
Photo by Robert C. Frampton



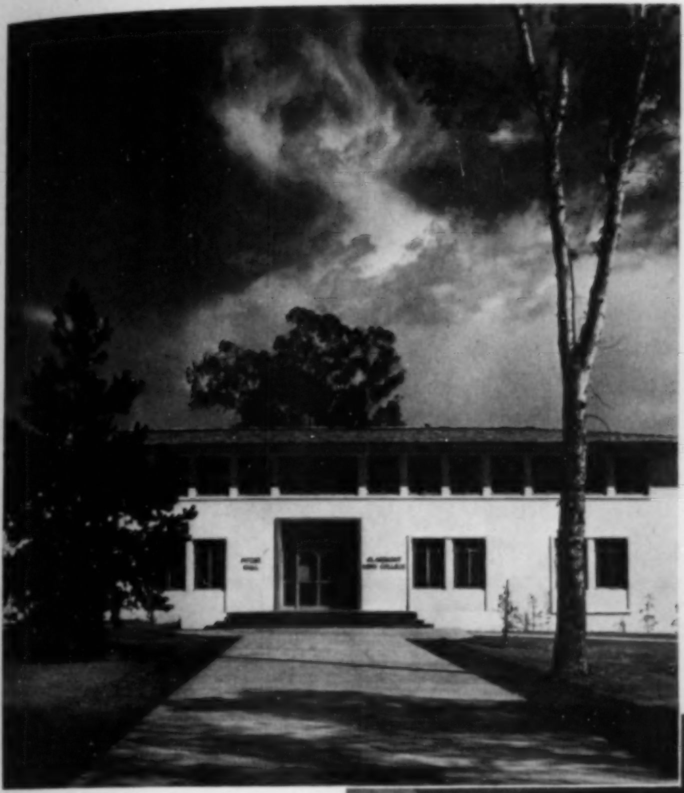
PITZER HALL, CLAREMONT MEN'S COLLEGE


W
M
OFFICES
OFFICES
0 10 20 30 40 50

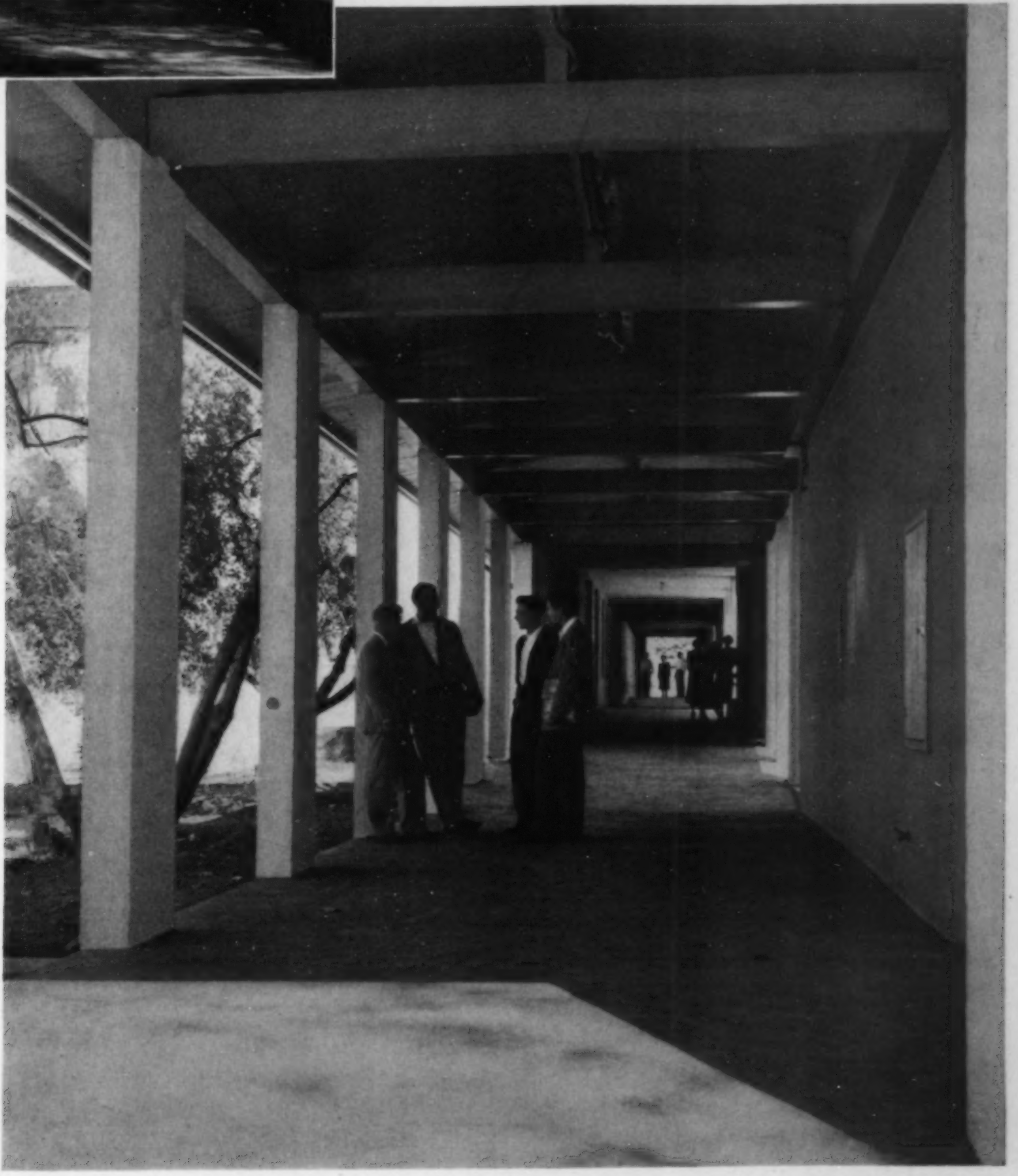
SECOND FLOOR


NORTH
CLASSRM.
CR
CR
CR
CR
CR
CR
W
M
CR
CR
CR
BOARD RM
OFF
OFF
LOBBY
REGSTR
PRES
SEC
OFF
ADMIT
SEC
DEAN
0 10 20 30 40 50

FIRST FLOOR



Claremont Men's College is one of the Associated Colleges of Claremont, Calif.; it is young; enrollment is limited purposely. Its buildings are economical (reinforced concrete painted warm tones) yet of high quality; they are reminiscent of the local architectural vocabulary, but not copies; above all they are unpretentious, devoid of mannerisms and clichés — all of which reflects Claremont's aims: to retain a small college's advantages while making available, through the Association, a university's facilities. Pitzer Hall, shown here, is a classroom and administration building



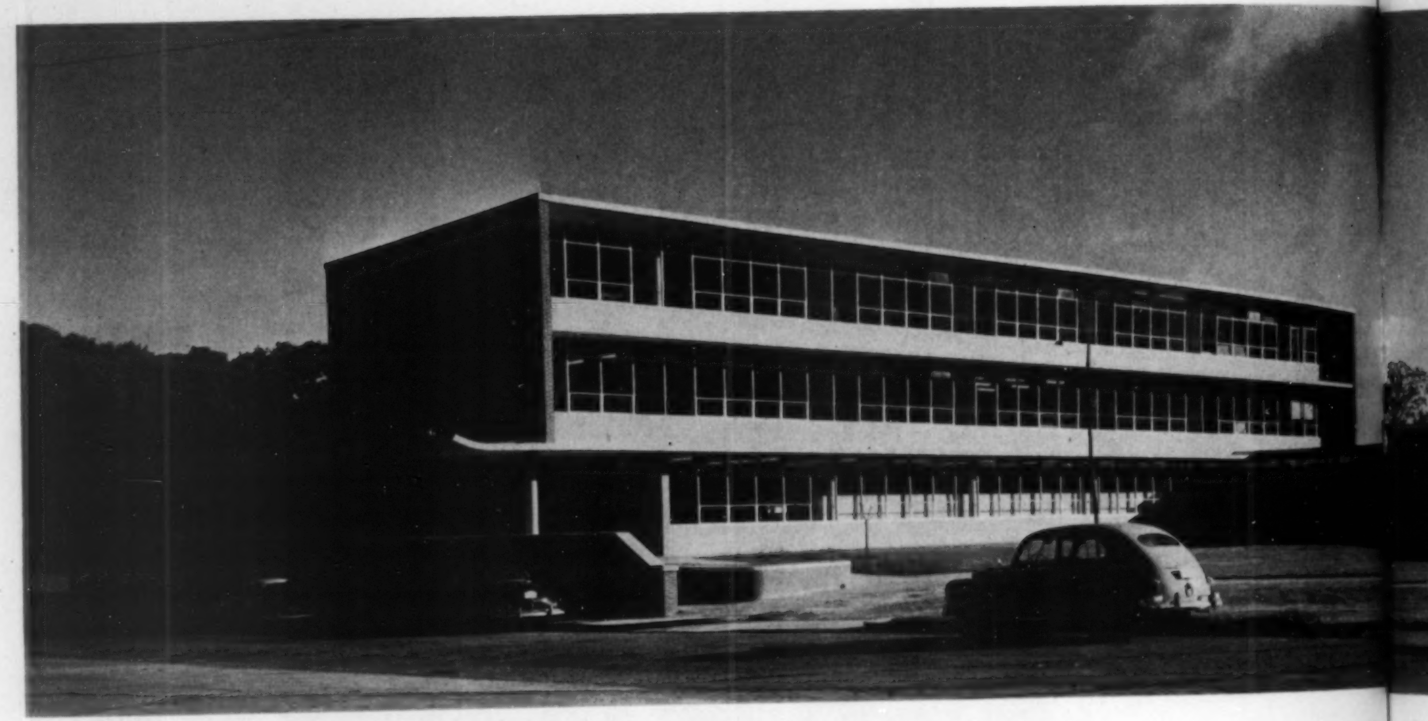
Robert C. Frampton Photos

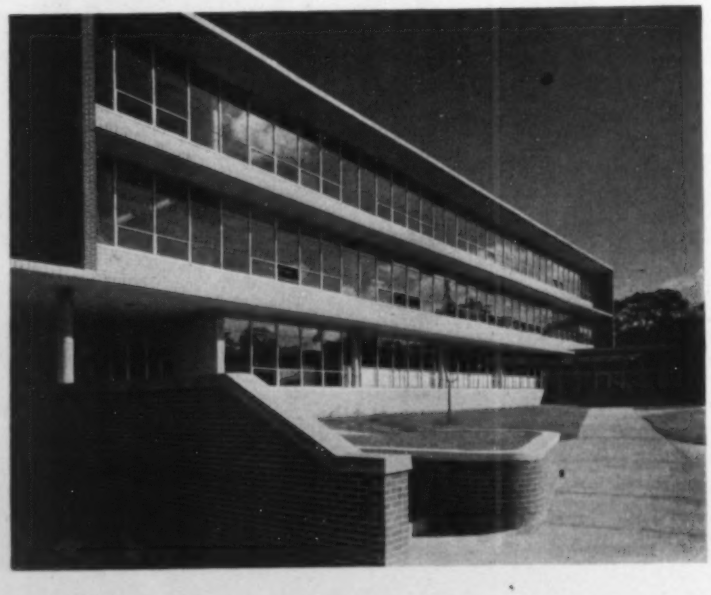
HARRISON HIGHTOWER
TEXTILE ENGINEERING BUILDING

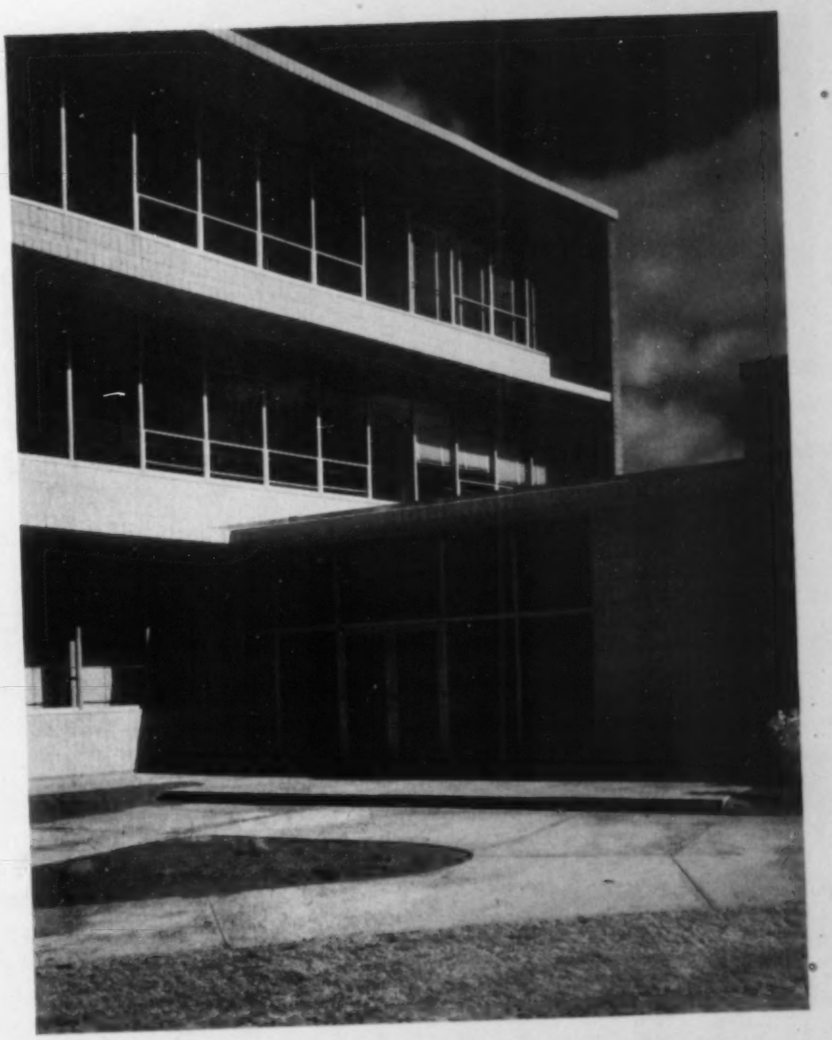
Georgia Institute
of Technology
Atlanta, Ga.

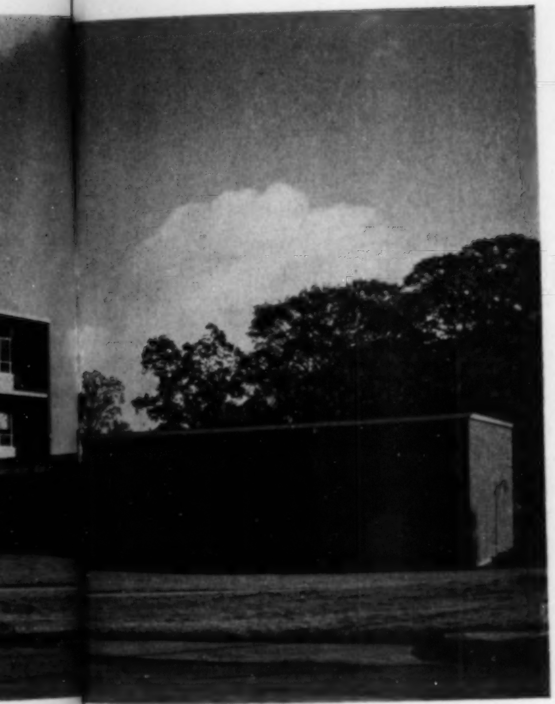
Bush-Brown
Gailey & Heffernan
Architects

Joseph Molitor Photos

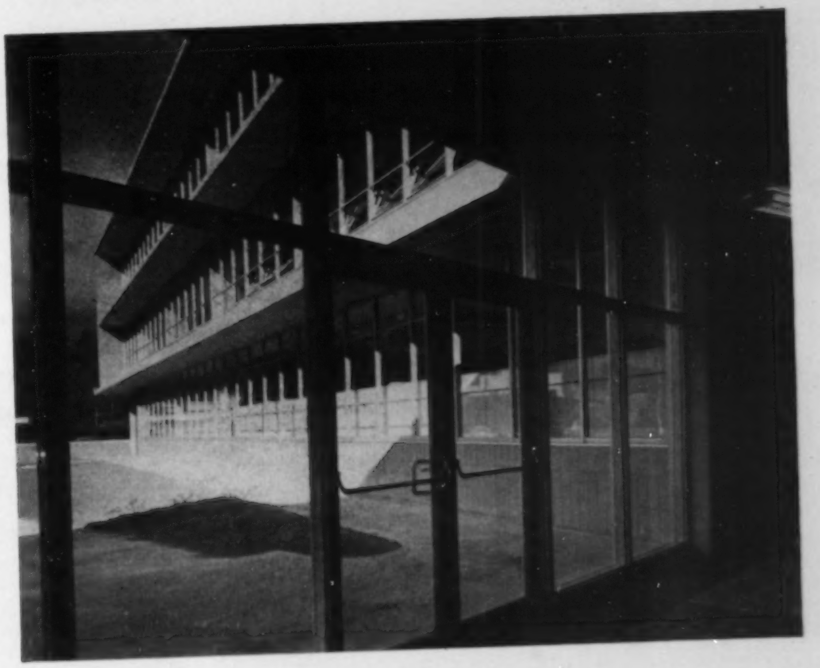




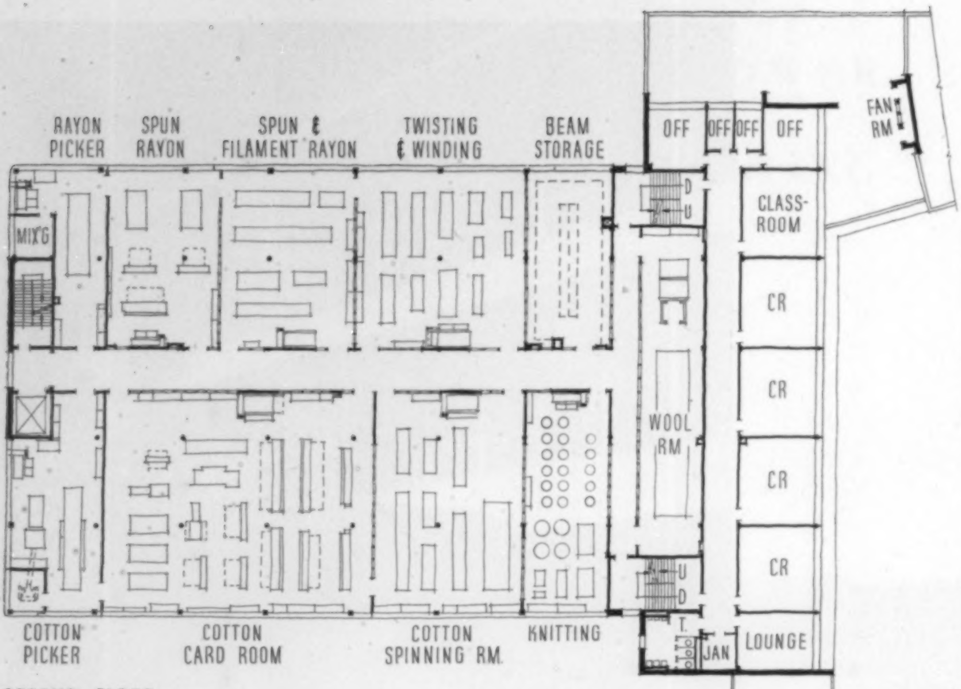




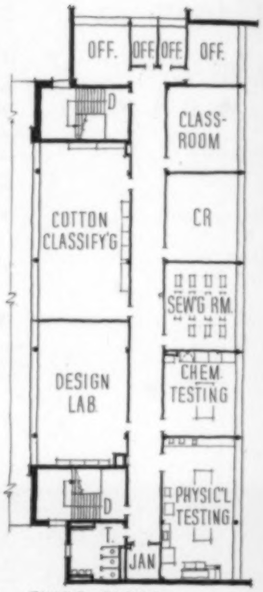
Georgia Tech's new textile engineering building, designed for 400 occupants, provides facilities for instruction and research. It has three distinct units: an auditorium seating about 300 (foreground, above); a three-story classroom unit (classrooms, offices, laboratories, toilets, exhibition gallery) which dominates the mass; behind this, a two-story mill area in which are carried on most of the textile operations in use in the industry today



Photos on these pages all show the dominance of the simple concrete and brick classroom building. Consulting engineers were: James J. Pollard (structural); Newcomb & Boyd (plumbing and electrical); C. T. Baker (heating, ventilating, air conditioning). General contractor was the Ray M. Lee Co.


RAYON PICKER
SPUN RAYON
SPUN & FILAMENT RAYON
TWISTING & WINDING
BEAM STORAGE
OFF
OFF
OFF
OFF
FAN RM
MIX'G
D
U
CLASS-ROOM
CR
CR
CR
CR
WOOL RM
U
D
T.
JAN
LOUNGE
COTTON PICKER
COTTON CARD ROOM
COTTON SPINNING RM.
KNITTING

SECOND FLOOR


OFF.
OFF
OFF
OFF.
D
CLASS-ROOM
COTTON CLASSIFY'G
CR
SEW'G RM.
DESIGN LAB.
CHEM. TESTING
PHYSIC'L TESTING
D
T.
JAN

THIRD FLOOR

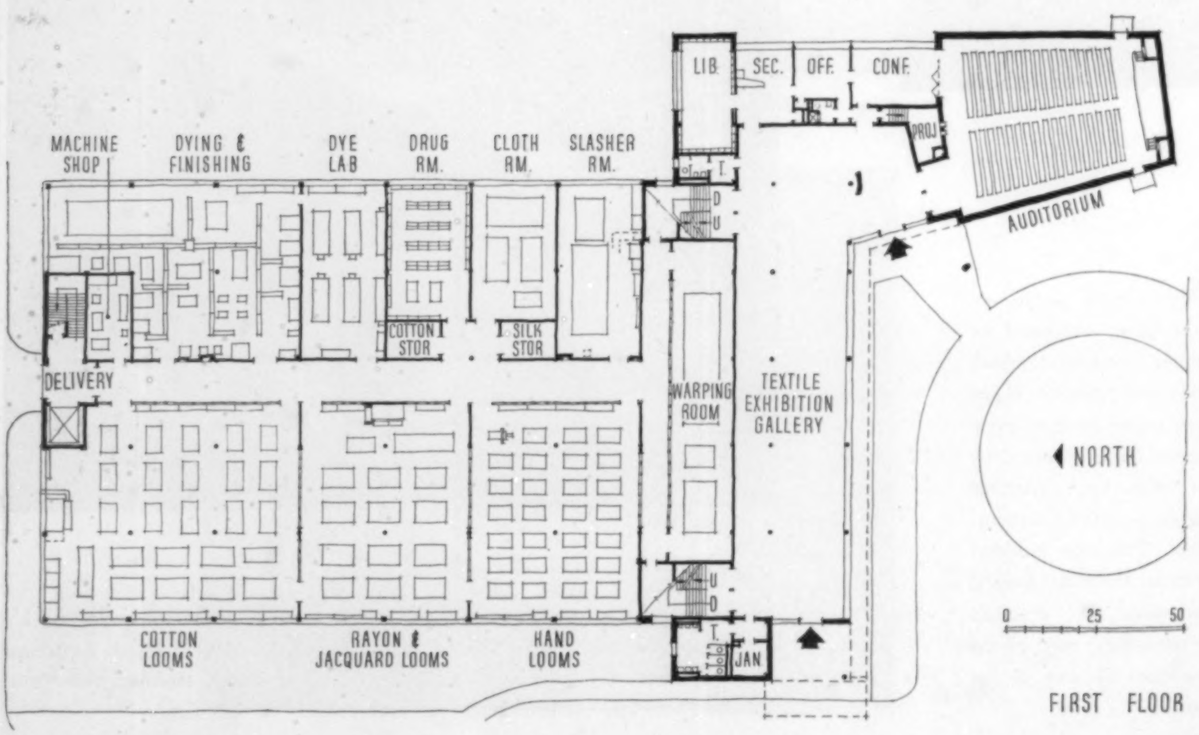
TEXTILE ENGINEERING BUILDING

GEORGIA INSTITUTE OF TECHNOLOGY

Construction is reinforced concrete frame and floor slabs, with 8 in. structural clay back-up tile and brick walls; some spandrels are faced with glazed structural facing tile. Partitions are clay tile, with some wood and glass in mill area. The entire building rests on cast-in-place concrete piles, required by poor soil. Windows are aluminum, projected type. The building is completely air conditioned and has fluorescent lighting throughout.

920 925
NORTH
MILL AREA
CLASSRM AREA

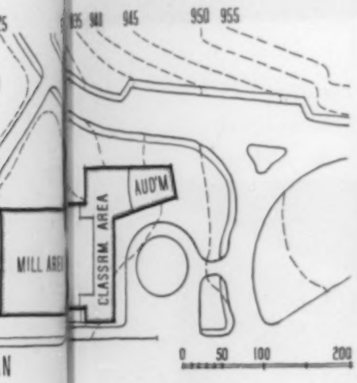
SITE PLAN

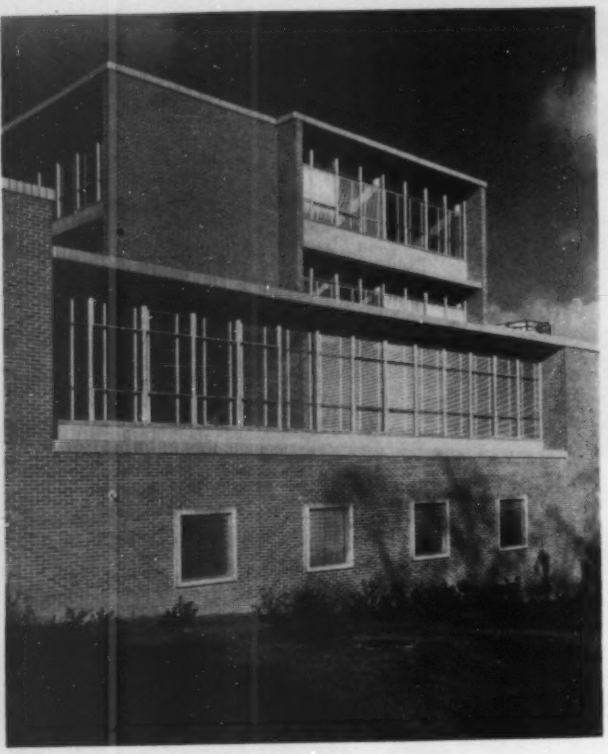

LIB.
SEC.
OFF.
CONF.
PROJ.
AUDITORIUM
MACHINE SHOP
DYING & FINISHING
DYE LAB
DRUG RM.
CLOTH RM.
SLASHER RM.
T.
D
U
COTTON STOR
SILK STOR
DELIVERY
WARPING ROOM
TEXTILE EXHIBITION GALLERY
NORTH
U
D
T.
JAN
COTTON LOOMS
RAYON & JACQUARD LOOMS
HAND LOOMS
0
25
50

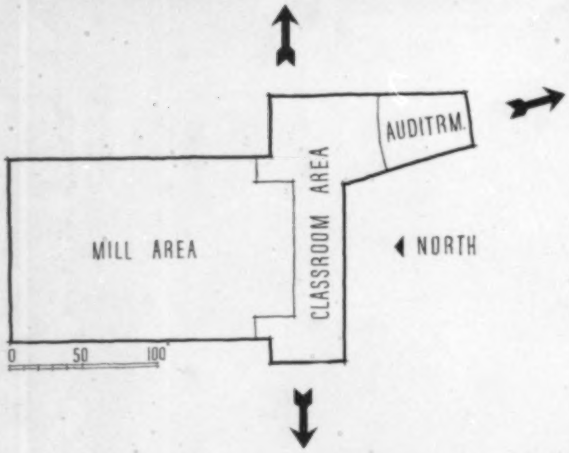
FIRST FLOOR

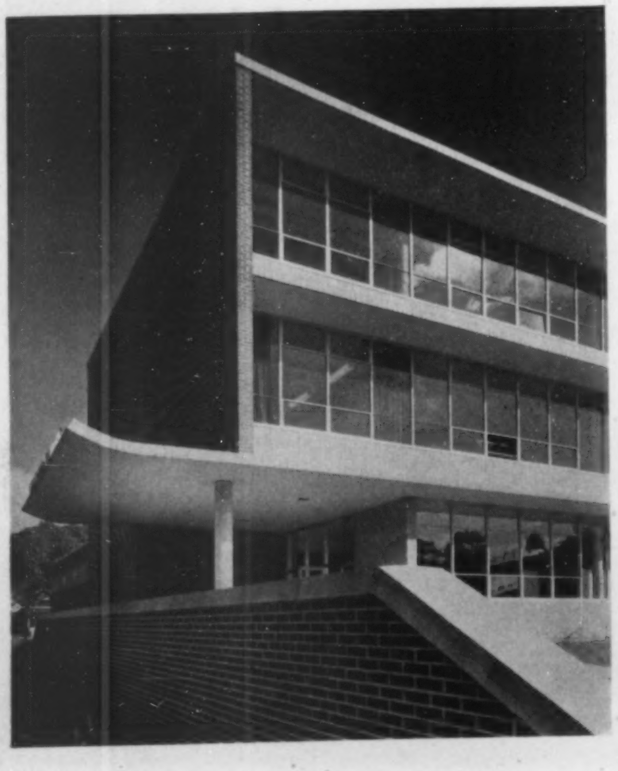
Mill area, seen at right from library window, has insulating glass block light strip in which are set ventilating sash; the area is air conditioned by individual units, one in each room, to permit maintaining optimum humidity and temperature characteristics required by the different manufacturing operations. Lighting here is from continuous fluorescent troffers. Floors are cement in some rooms, hard maple on sleepers in others. Stairs are located between mill and classroom units because floor levels and story heights differ in the two portions of the building

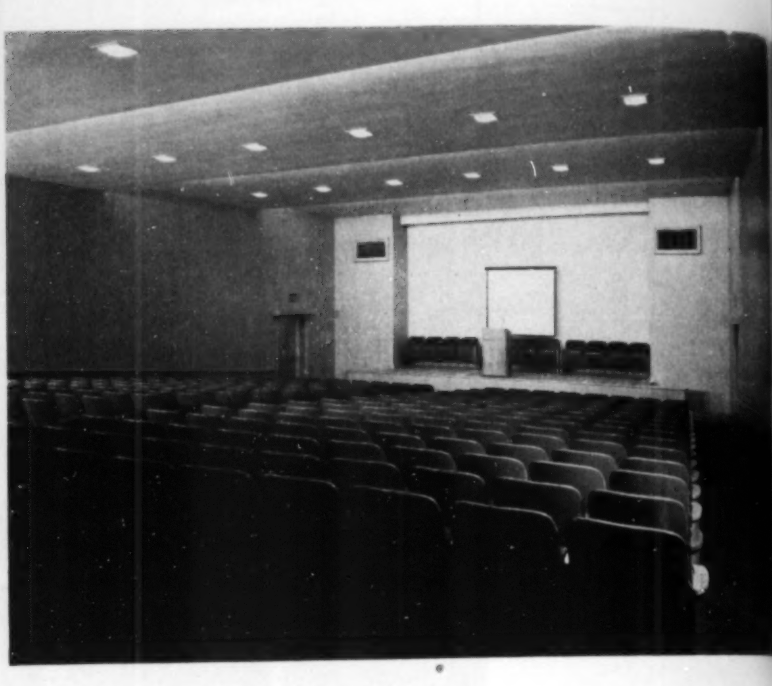
Joseph Molitor Photos



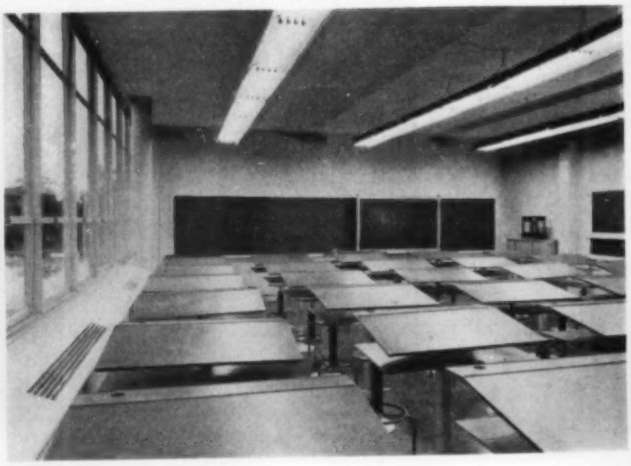


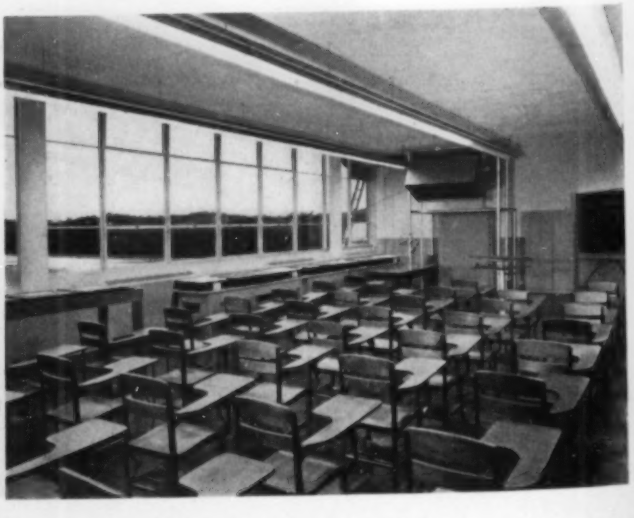

AUDITRM.
CLASSROOM AREA
MILL AREA
NORTH
0
50
100

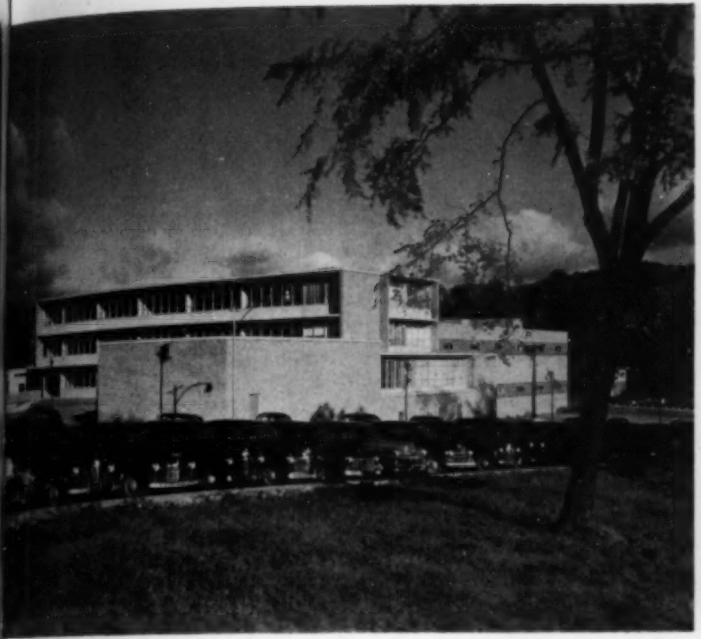




Interiors: above, auditorium; below, classrooms



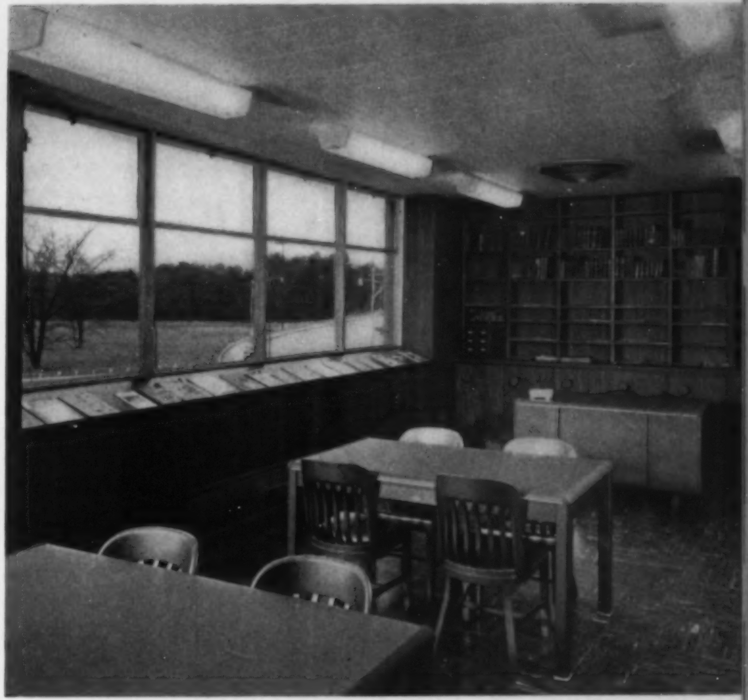




Seen from any point of view, the components of the textile engineering building are distinct: the windowless auditorium block, the glass-walled, sun-shaded classroom block, the mill looking like exactly what it is, an industrial building. For actual construction the cost was approximately $959,600; including steam and electric supplies, fees, landscaping, seating, cost was $1,100,000. This did not include textile machinery and equipment, office furnishings, etc. Cost per sq ft was $11.70 on the first basis, $13.55 on the second; per cu ft, $.74 or $.85

Laboratory also requires air conditioning

Above, secretary's office, looking through to library



Library (above), offices, conference rooms have acoustic ceilings

ART CENTER EMPHASIZES TEACHING

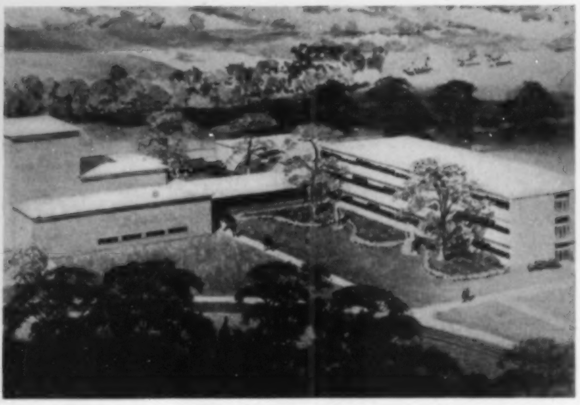
COLLEGE BUILDINGS

Fine Arts Center

University of Arkansas, Fayetteville, Ark.

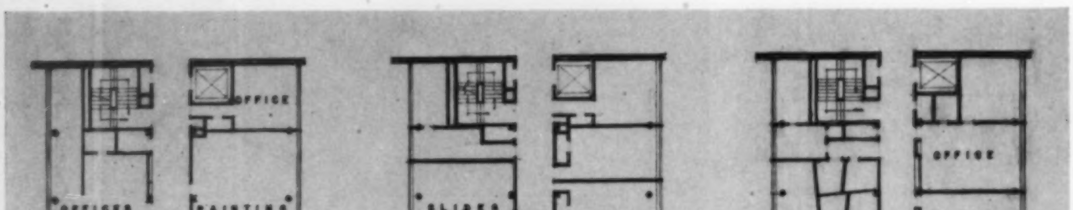
Edward D. Stone; Haralson & Mott

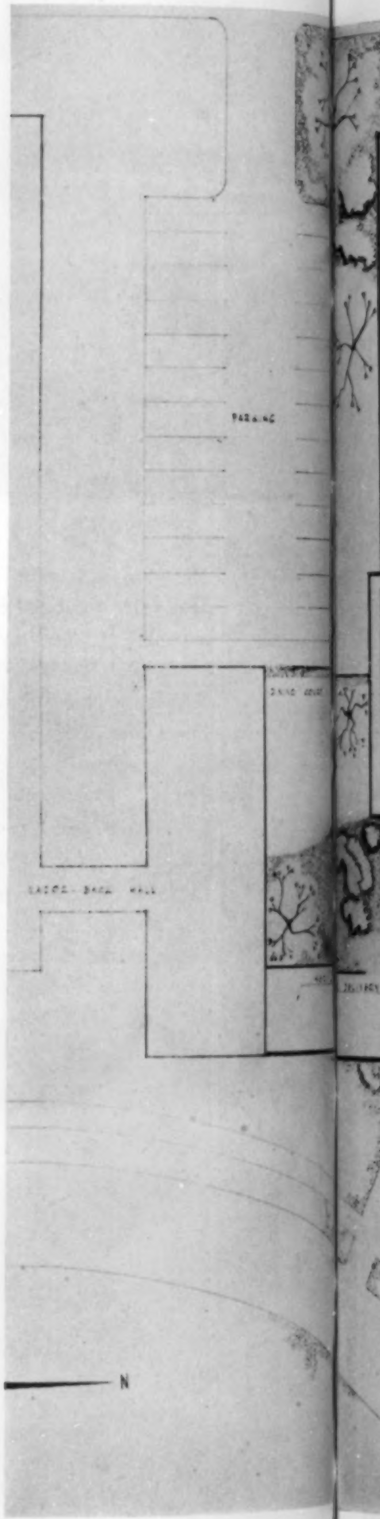
Associated Architects



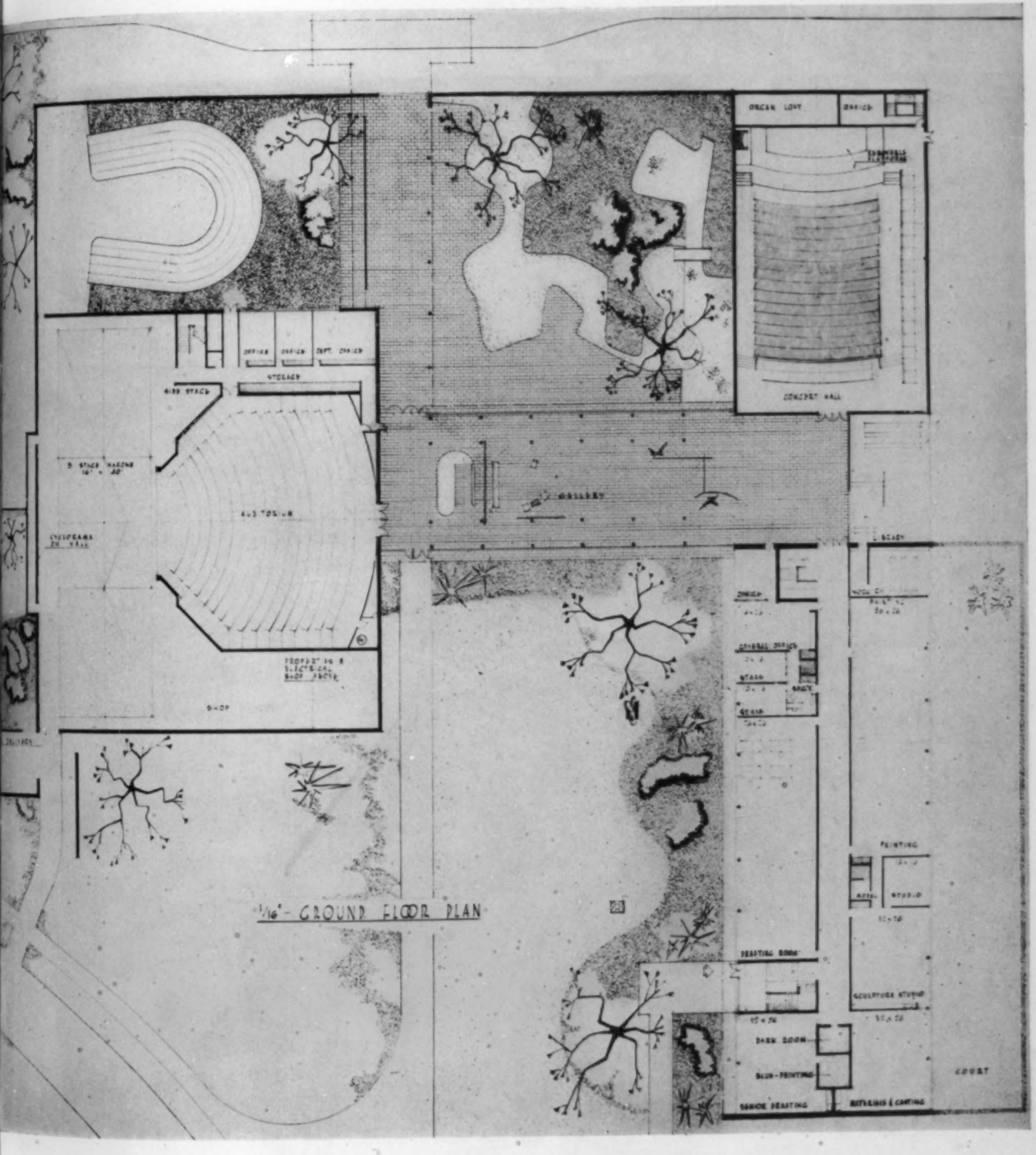
A group of three related buildings—theater, concert hall and classroom unit—with connecting gallery and courts, comprises Arkansas' new Arts Center. All are visible in the rendering at right above; construction photo, left above, shows status of classroom building, March, 1950. Throughout design, teaching requirements are emphasized

Classroom Building plans


OFFICE
OFFICES
PAINTING STUDIO
DRAFTING
DRAFTING
STUDIO
SCULPTURE STUDIO
DRAFTING
CASTING
SLIDES
CLASSROOM
DRAWING STUDIO
CLASSROOM
PRINT ROOM
CLASSROOM
COMMERCIAL ART STUDIO
OFFICE
CLASSROOM
MUSIC STUDIO
MUSIC STUDIO
LIBRARY
CLASSROOM
FIRST FLOOR
SECOND FLOOR
THIRD FLOOR



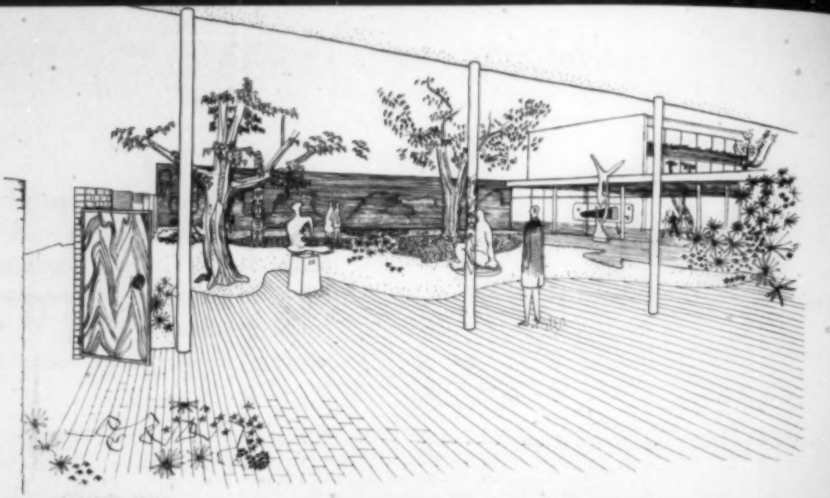
Although Arkansas badly needed an auditorium, there were not enough funds to built both it and an Arts Center, or to incorporate into the Center a University auditorium and also provide all the space and equipment needed for complete facilities for teaching dramatics. It was decided to build the Center for teaching and wait for an auditorium


ORGAN LOFT
OFFICE
CONCERT HALL
OFFICE
OFFICE
DEPT. OFFICE
STORAGE
SIDE STAGE
9 STAGE WAGONS 16' x 20'
CYCLORAMA ON WALL
AUDITORIUM
SHOP
GALLERY
1/16" - GROUND FLOOR PLAN
OFFICE
GENERAL OFFICE
STAFF
STAFF
PAINTING
STUDIO
DRAFTING ROOM
SCULPTURE STUDIO
DARK ROOM
BLUE-PRINTING
SENIOR DRAFTING
COURT

Library, between Concert Hall and Classroom Building, has been restudied; see next page. Court north of classrooms is for outdoor work. Final classroom building plans are on facing page

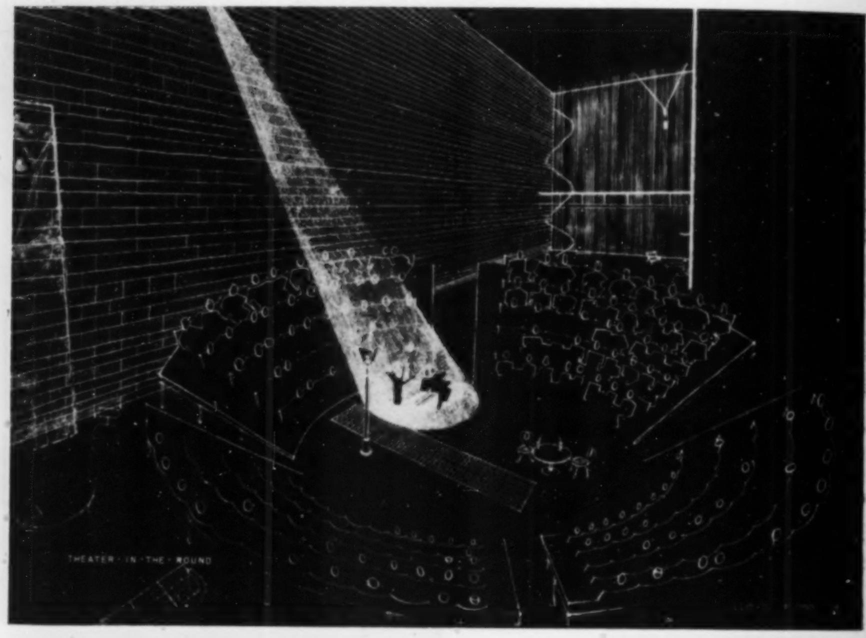
FINE ARTS CENTER

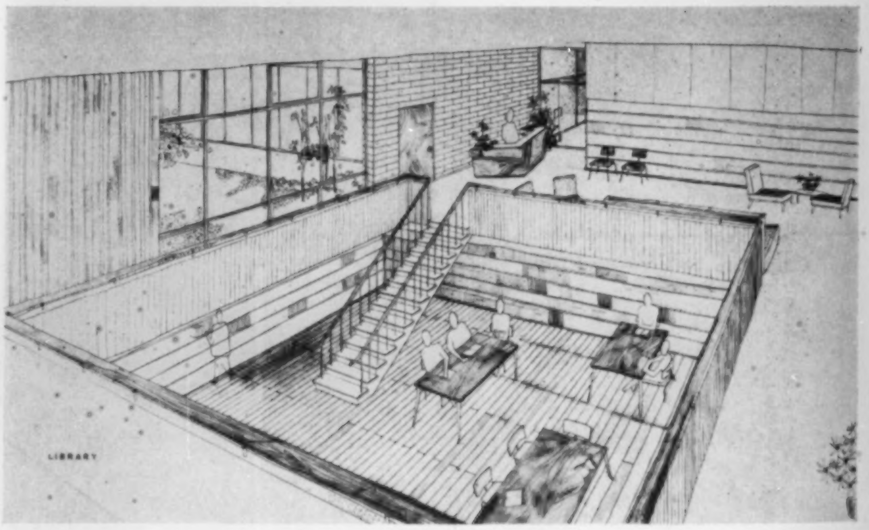
UNIVERSITY OF ARKANSAS

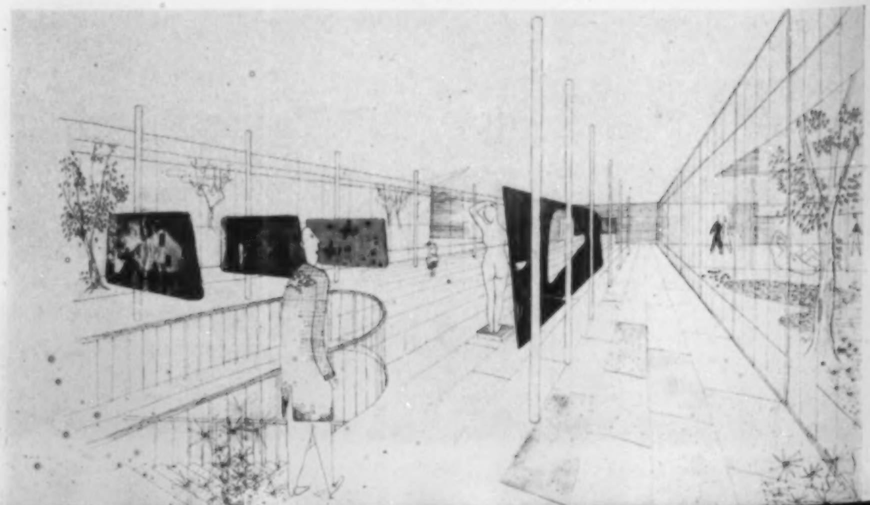


SCULPTURE COURT

Since 1873, shortly after the University opened, Arkansas has offered instruction in some of the fine arts. Starting with a Department of Music, courses in other arts have been added at intervals, the latest being a full architectural course. In the early 40's it was decided to set up a Division of Fine and Applied Arts, which will move to this Center when construction is completed. The Center is intended not only to facilitate close coordination of the arts themselves but also to offer all students, whatever their field of study, a chance at the cultural growth which study of the arts affords. The existing Arkansas buildings are of various architectural styles, none of them particularly compatible with that burning curiosity which accompanies pursuit of a creative art. The new Center is designed to stimulate experimentation. In the theater, seating and stage can be changed from conventional proscenium type to theater-in-the-round; there are ample shops, dressing rooms, wing space. The gallery (bottom rendering) connecting the buildings — for use as reception hall, art gallery, etc. — has walls of glass through which one can see on one side the Ozarks, on the other, a sculpture court for student or loan exhibits

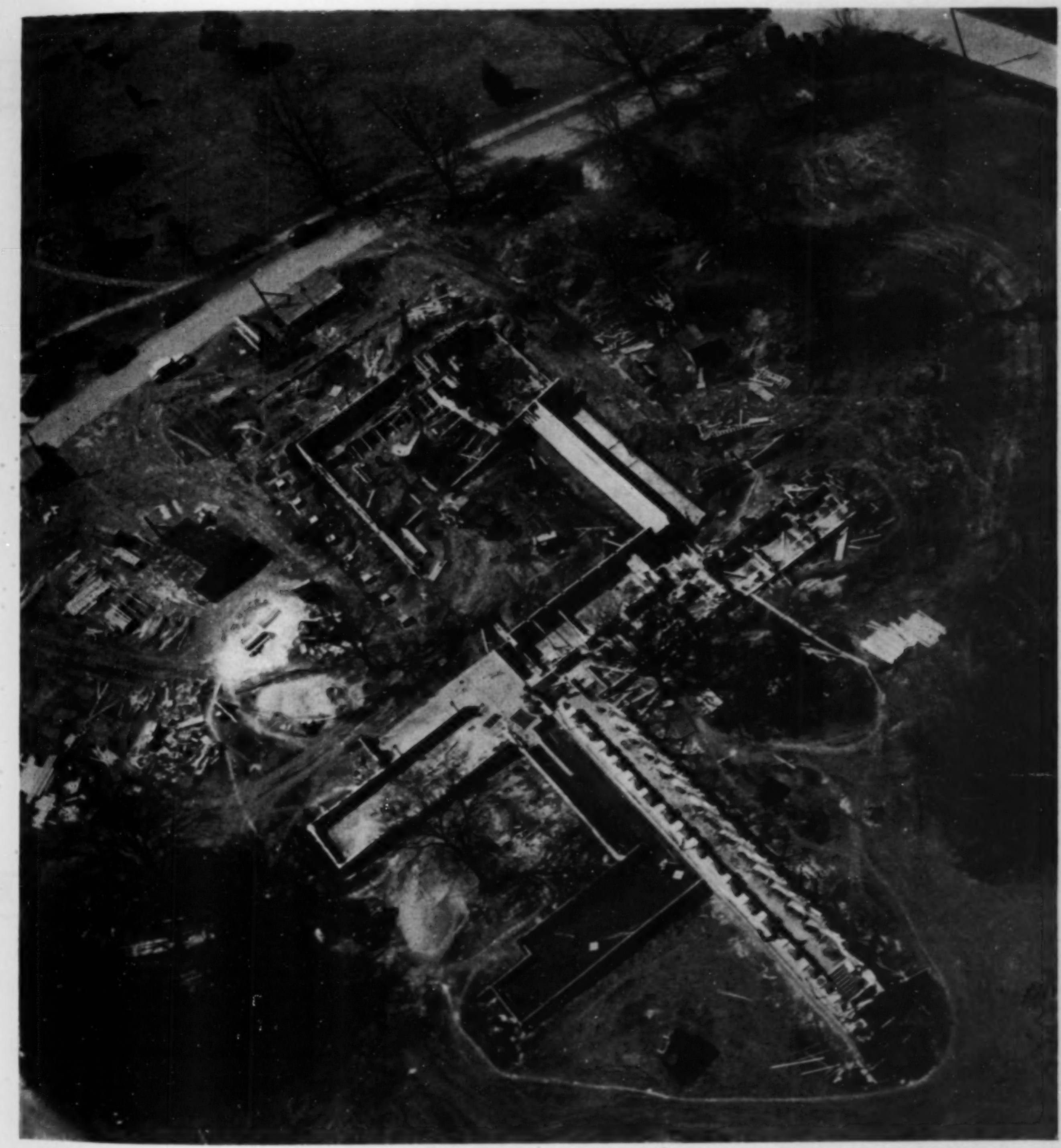




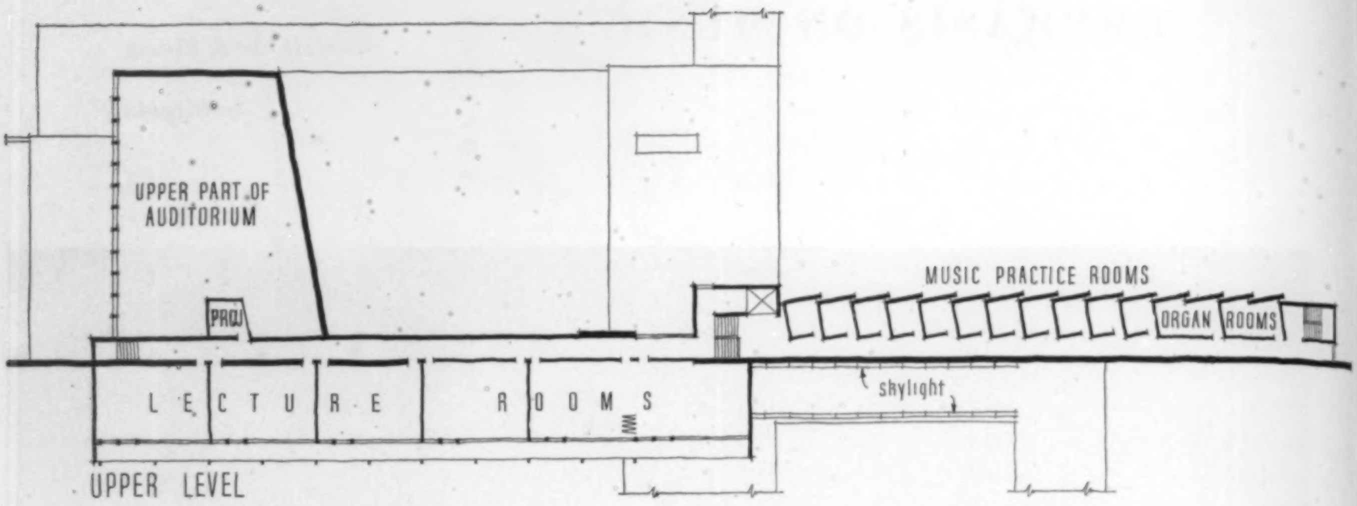


FINE ARTS, WITH EMPHASIS ON MUSIC

Fine Arts Center
Maryville College
Maryville, Tenn.
Schweikher & Elting
Architects

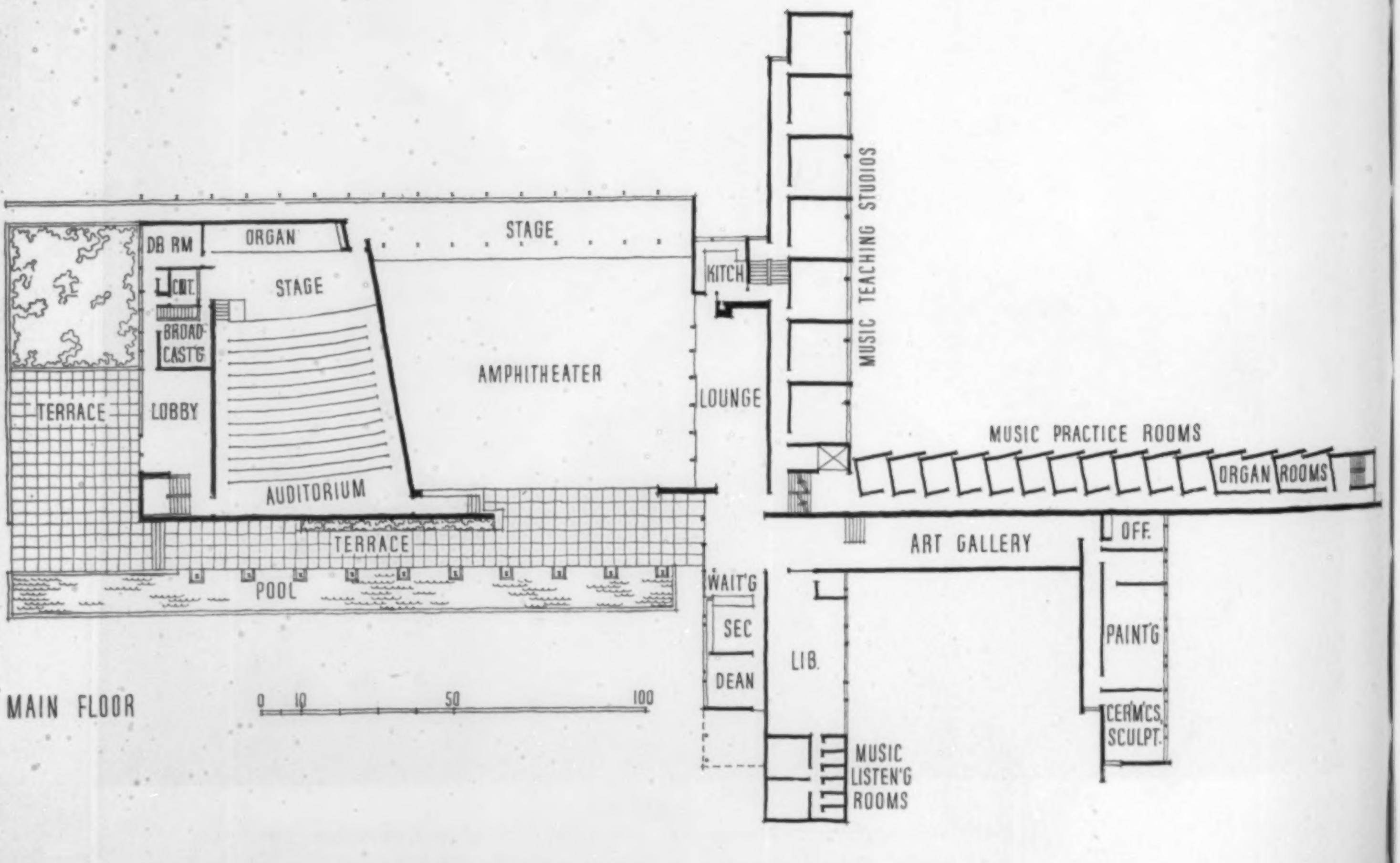


Maryville's reputation in music is high; nearly two thirds of its students take one or more music courses. Practice rooms occupy entire wing (lower right in air view). Painting and sculpture departments (cross wing in center) can expand independently of rest of Center

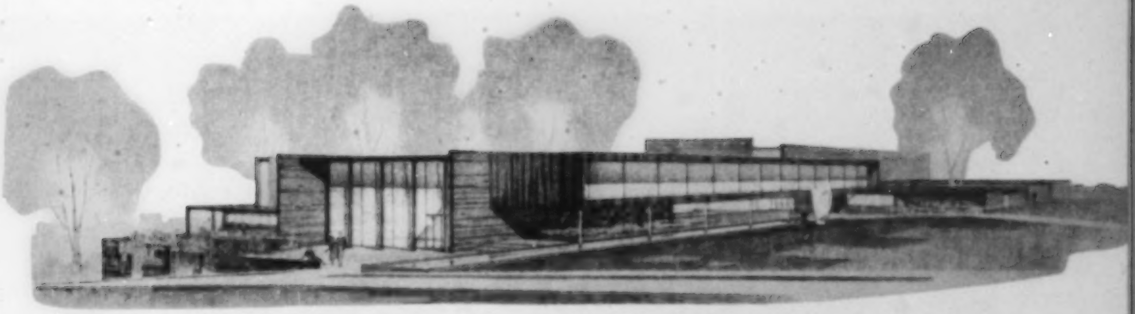

UPPER PART OF AUDITORIUM
PROJ
MUSIC PRACTICE ROOMS
ORGAN
ROOMS
LECTURE ROOMS
skylight

UPPER LEVEL

FINE ARTS CENTER, MARYVILLE COLLEGE

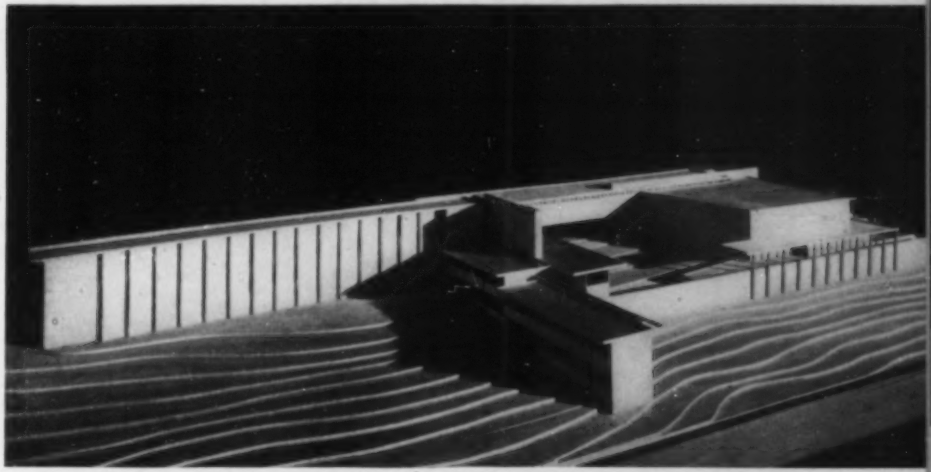

DB RM
ORGAN
STAGE
STAGE
CNT.
BROADCAST'G
KITCH
TERRACE
LOBBY
AMPHITHEATER
LOUNGE
MUSIC TEACHING STUDIOS
MUSIC PRACTICE ROOMS
ORGAN
ROOMS
AUDITORIUM
TERRACE
POOL
ART GALLERY
OFF.
WAIT'G
SEC
DEAN
LIB.
PAINT'G
CERM'CS, SCULPT.
MUSIC LISTEN'G ROOMS
0
10
50
100

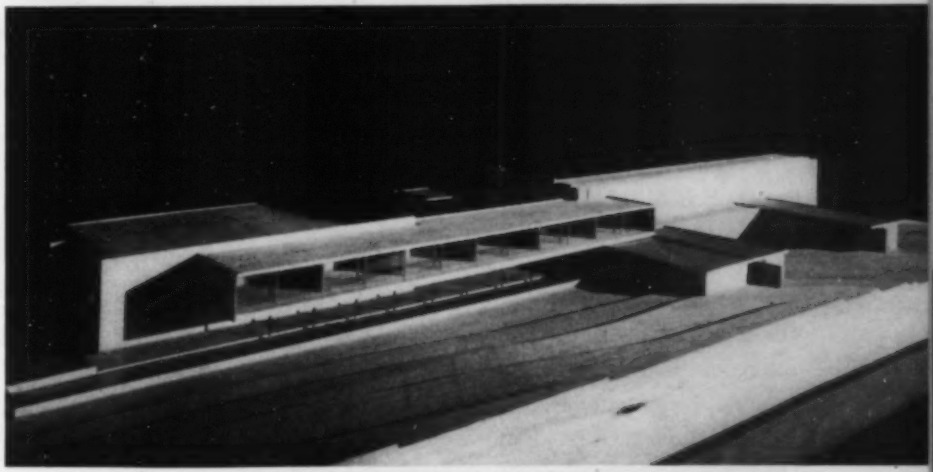
MAIN FLOOR

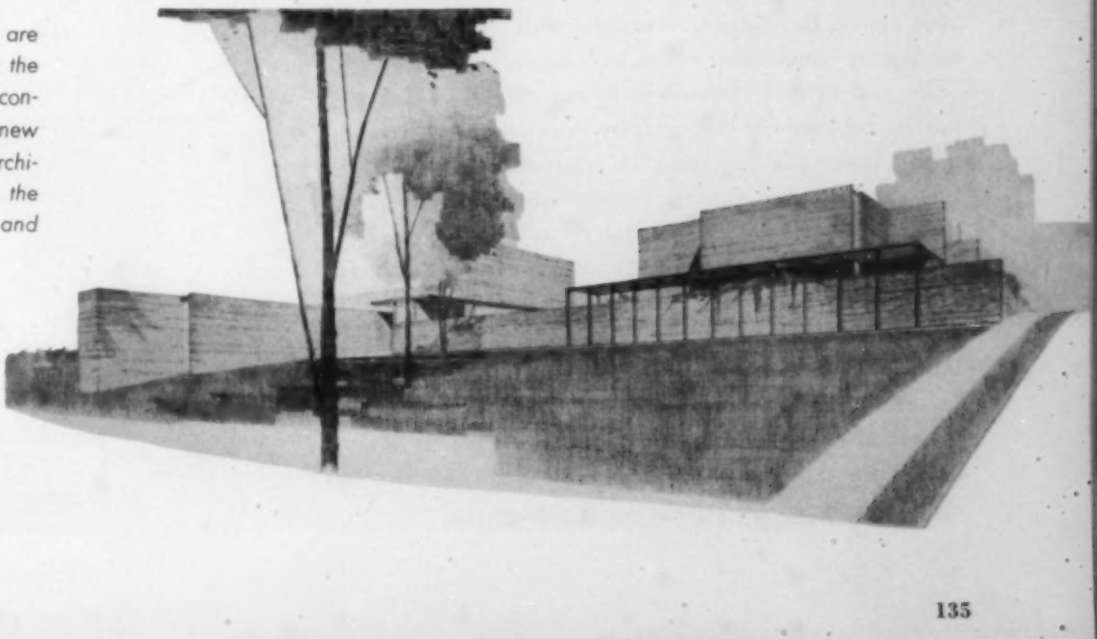


Maryville's Fine Arts Center, now under construction, is planned so any element or department can be expanded without seriously modifying the others. Its music hall is isolated so daytime functions will not interfere with other activities; its outdoor, lawn-terraced amphitheater is to be used for musicals and other gatherings. The main part of the Maryville campus lies to the southeast; organ practice and music teaching rooms open away from it. It was desired to have music practice rooms face northeast as well; to set them in a wing having this exposure would have blocked expansion and increased corridor lengths; hence the saw-tooth wall in the wing as built, with narrow vertical windows. Incorporated in the building is Maryville's broadcasting station. Construction: red brick walls, exposed inside and out; concrete floor slabs (upper stories precast), exposed except for the wood classroom flooring; operating sash and doors redwood; structural steel exposed and painted gray. All mechanical equipment, piping, conduit, cast-iron finned radiators, etc., are to be left exposed. This entails considerable care in mechanical installations, but the extra labor has not raised costs because all work is in the open.

Maryville's other buildings are Georgian in derivation, built from the 1850's on; red brick is the only conscious tie between these and the new Center. The courage to build in architectural tune with the times, say the architects, ". . . is the College's and the donor's"



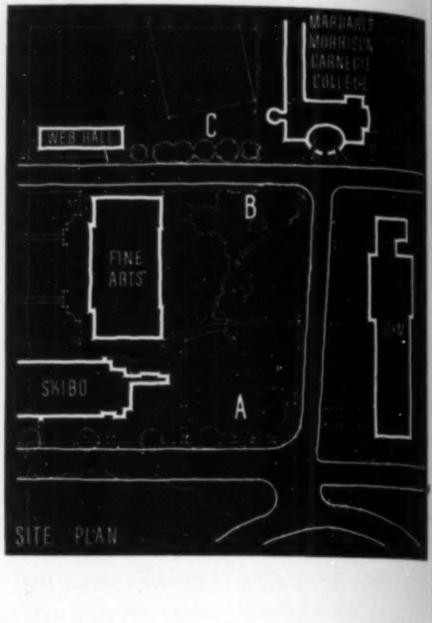




SCHOOL OF INDUSTRIAL ADMINISTRATION

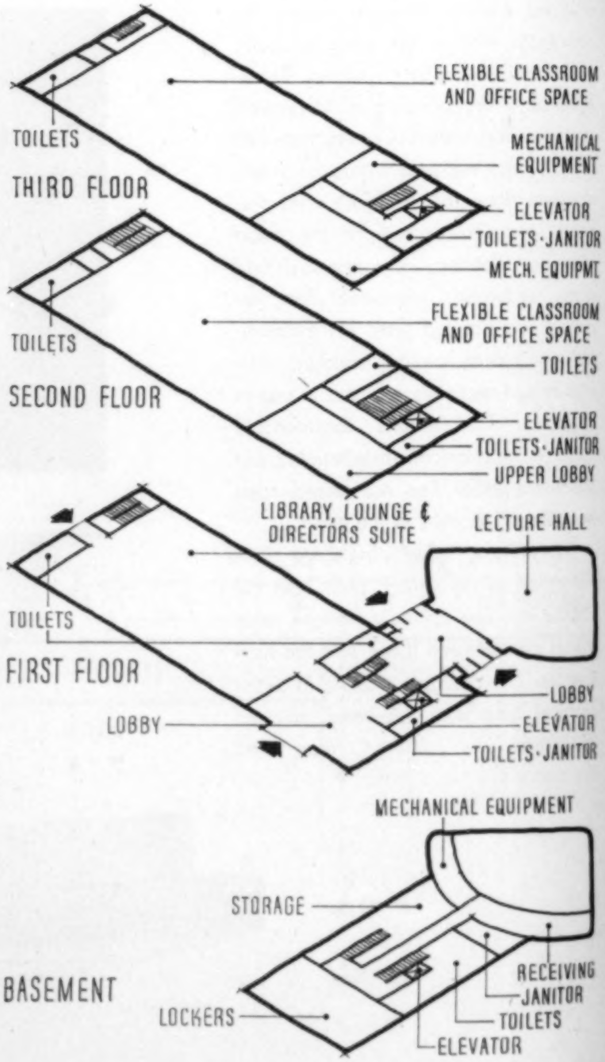
COLLEGE BUILDINGS

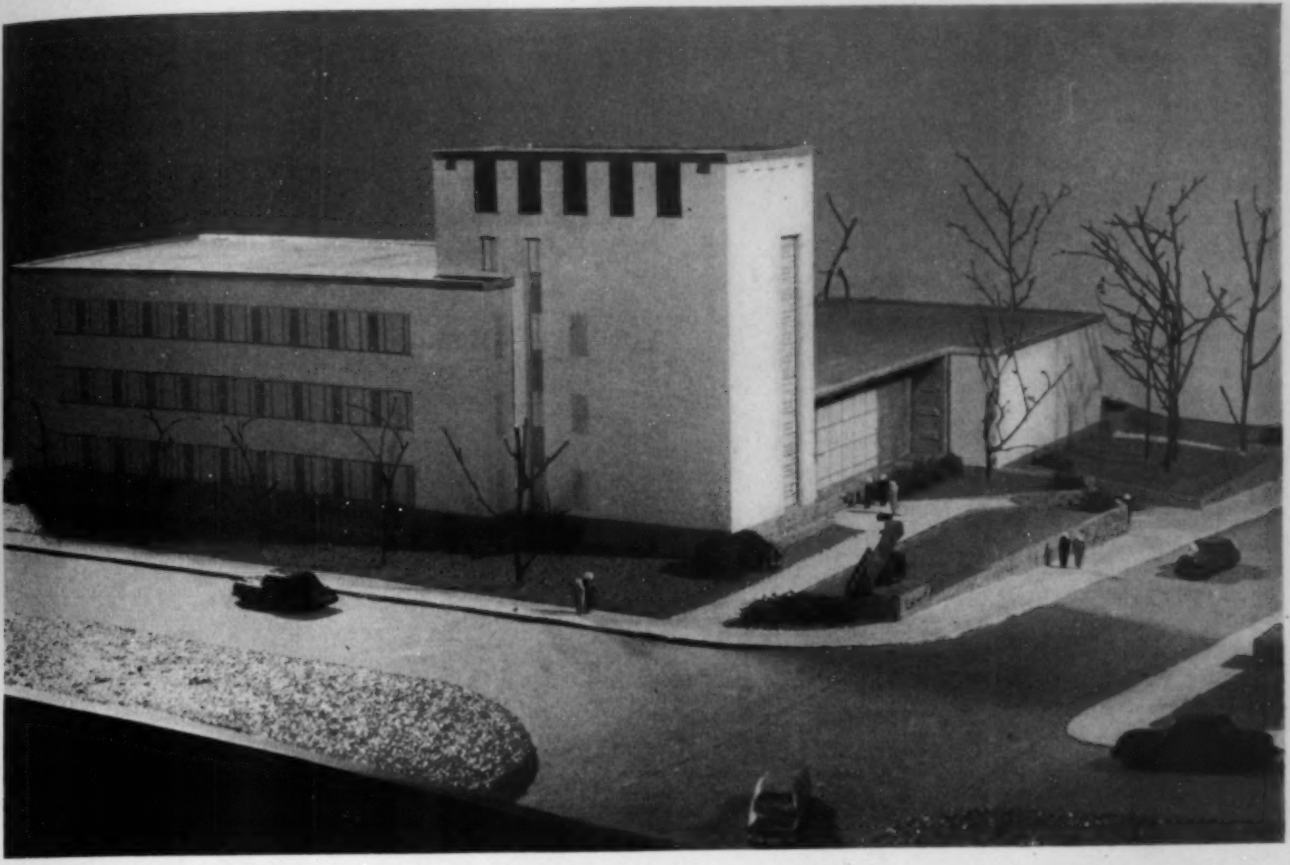
Carnegie Institute
of Technology
Pittsburgh, Pa.
Marlier & Johnstone
Architects


MARGARET MORRISON CARNEGIE COLLEGE
WEB HALL
C
B
FINE ARTS
GYM
SKIBO
A
SITE PLAN

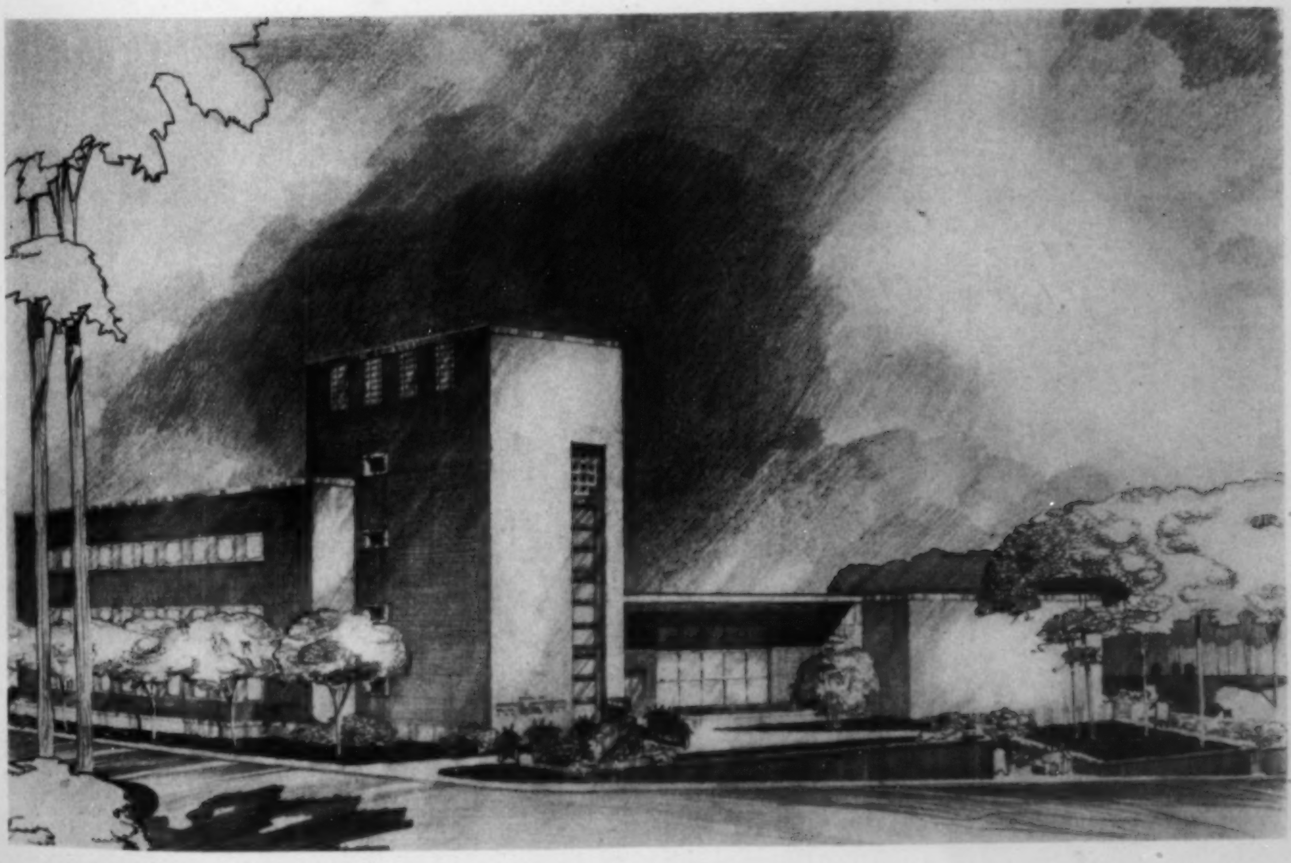
The School of Industrial Administration, William Larimer Mellon, Founder, was designed for Carnegie Institute of Technology with full understanding (to quote the architects) that ". . . the physical form and character of space and equipment serving education influence the quality of the product" and that "education . ... must undergo constant development. Flexibility should be the keynote of instructional space." On these considerations the design was based.

Three sites were available: A, B and C on the plot plan above. Buildings were roughed out for all three so an honest comparison could be made; that known as "Site A, Scheme 1" (sketch plans at right) was adopted, partly because its topography was suitable, which meant lower building costs. In relation to other buildings, present and future, to student and public approach, orientation, etc., there were undeniable advantages. The plans show the building's elements, which fall into five groups: entrance, lobby; classrooms, library, offices; Dean's suite; lecture hall; vertical circulation and services. The classroom wing was laid out in structural bays roughly 19½ by 23 ft, a module based on required furniture and door sizes; it is designed for movable partitioning, for changing spaces economically as educational needs change.


FLEXIBLE CLASSROOM AND OFFICE SPACE
TOILETS
MECHANICAL EQUIPMENT
THIRD FLOOR
ELEVATOR
TOILETS·JANITOR
MECH. EQUIPM
FLEXIBLE CLASSROOM AND OFFICE SPACE
TOILETS
TOILETS
SECOND FLOOR
ELEVATOR
TOILETS·JANITOR
UPPER LOBBY
LIBRARY, LOUNGE & DIRECTORS SUITE
LECTURE HALL
TOILETS
FIRST FLOOR
LOBBY
LOBBY
ELEVATOR
TOILETS·JANITOR
MECHANICAL EQUIPMENT
STORAGE
BASEMENT
RECEIVING
JANITOR
TOILETS
LOCKERS
ELEVATOR



Rendering below shows final design, on which working drawings are well under way. Compare with photo of model, above, showing an earlier stage. Accepted scheme was developed for site A (see plot plan) after thorough investigation. Estimated cost: $1,200,000

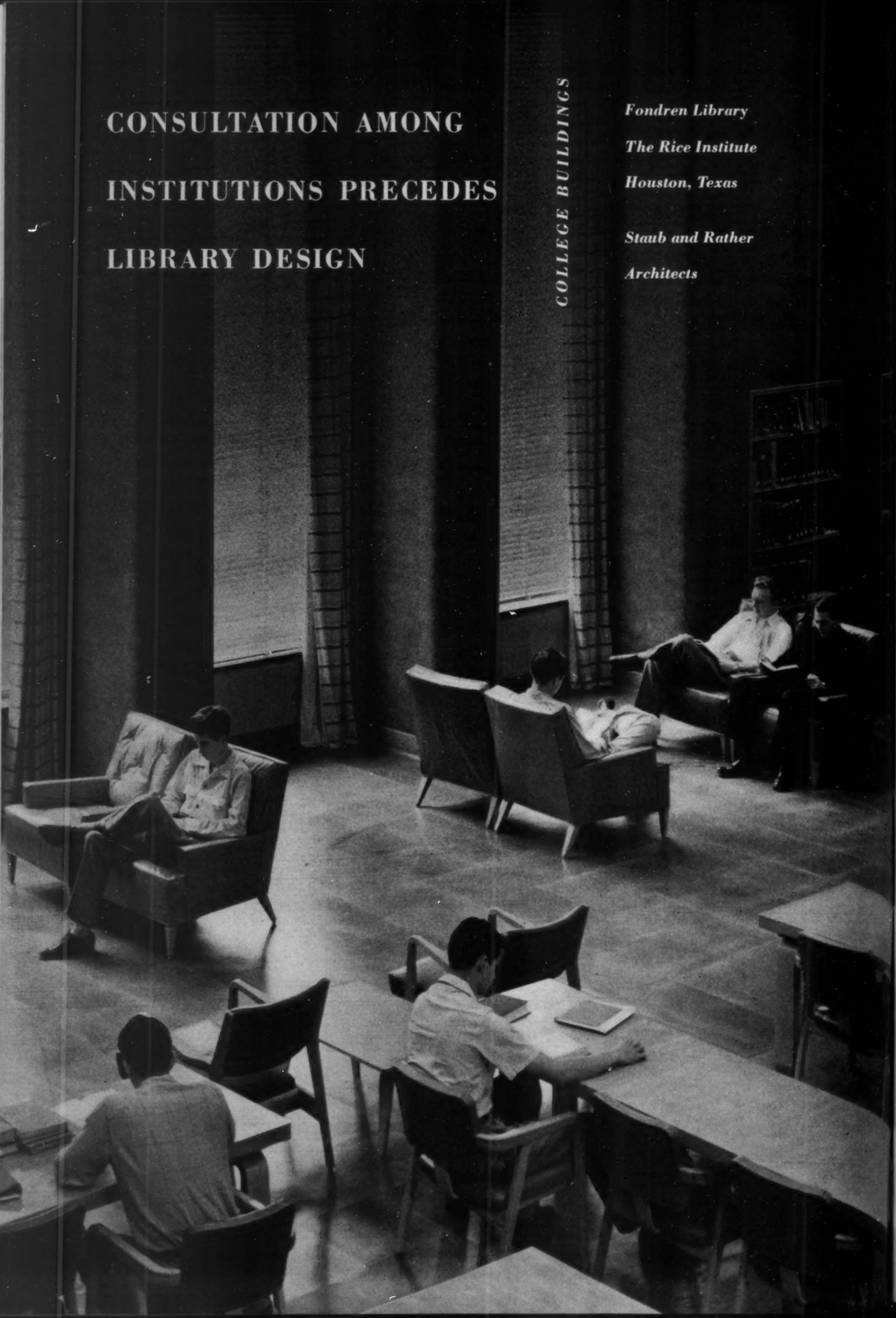


CONSULTATION AMONG INSTITUTIONS PRECEDES LIBRARY DESIGN

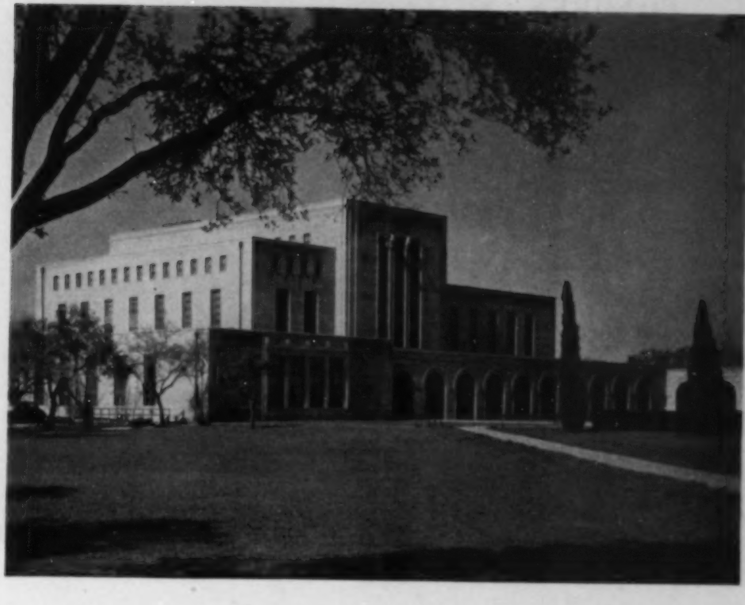
COLLEGE BUILDINGS

Fondren Library
The Rice Institute
Houston, Texas

Staub and Rather
Architects



WHEN the Fondren Library was being planned, a dozen institutions all over the USA were likewise planning libraries. Rice joined with the others in collaborative research and planning discussions, sending representatives to a succession of meetings at which each institution's plans were presented and openly criticised. Revisions and re-revisions were made and criticised in turn, and in addition the Fondren Library studies were subjected to searching analysis by John E. Burchard of Massachusetts Institute of Technology, and his findings were thoroughly reviewed by Rice Institute.

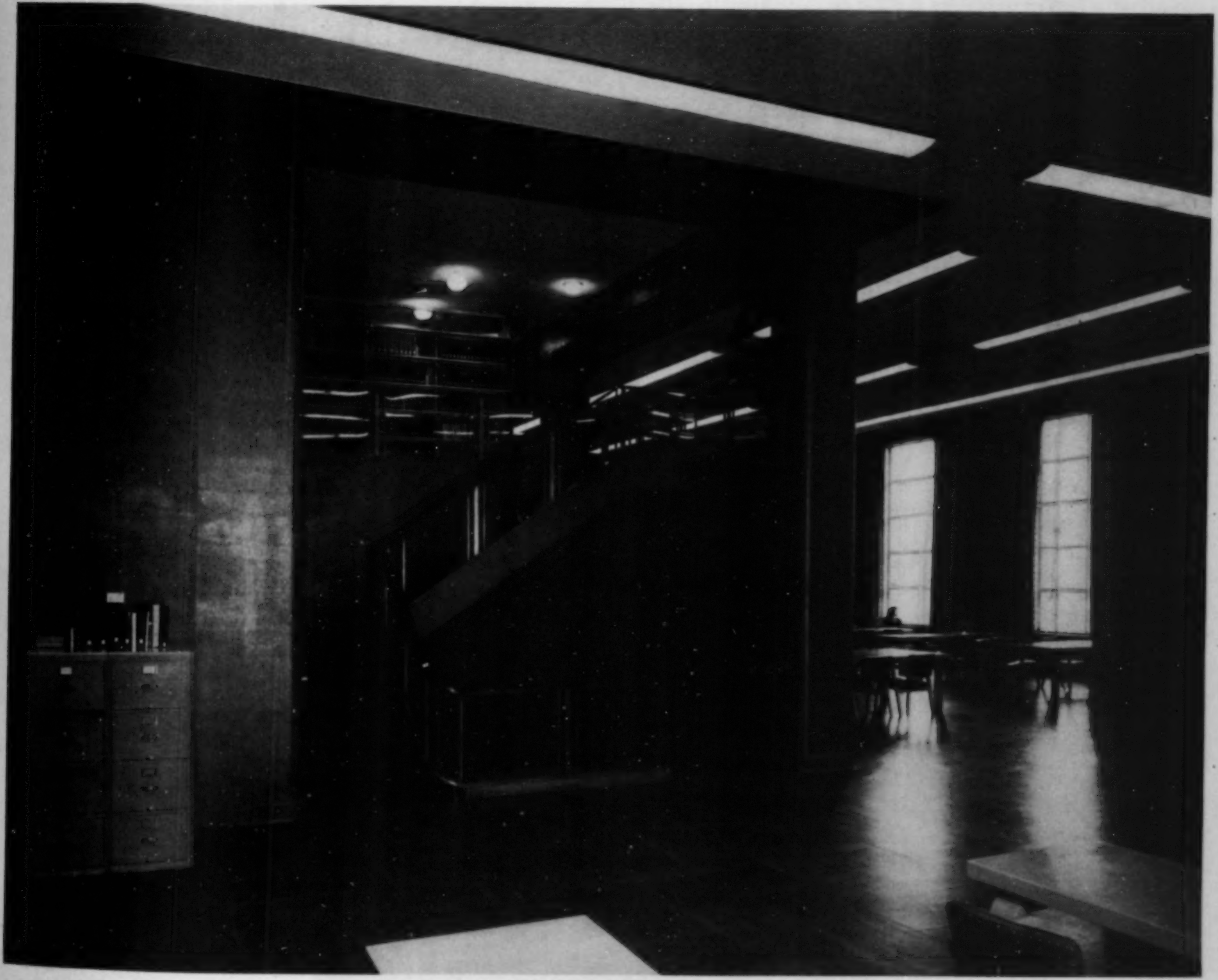


William Ward Watkin
Consulting Architect

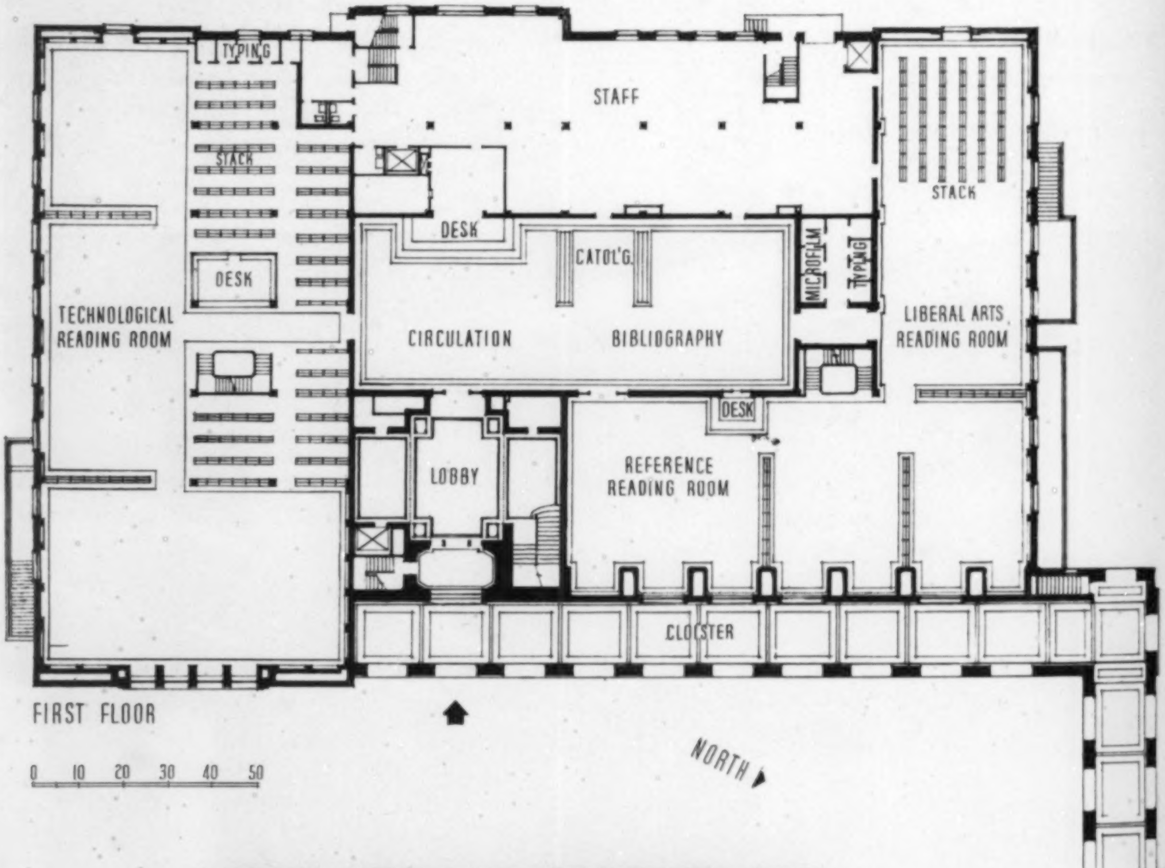
Jane Kidder, Designer, Interiors

Burt Moritz Photos

Rice Institute's buildings have remarkably uniform architectural handling; Mediterranean influence strongly affected library's design. Facing page: technological reading room; below, toward liberal arts room

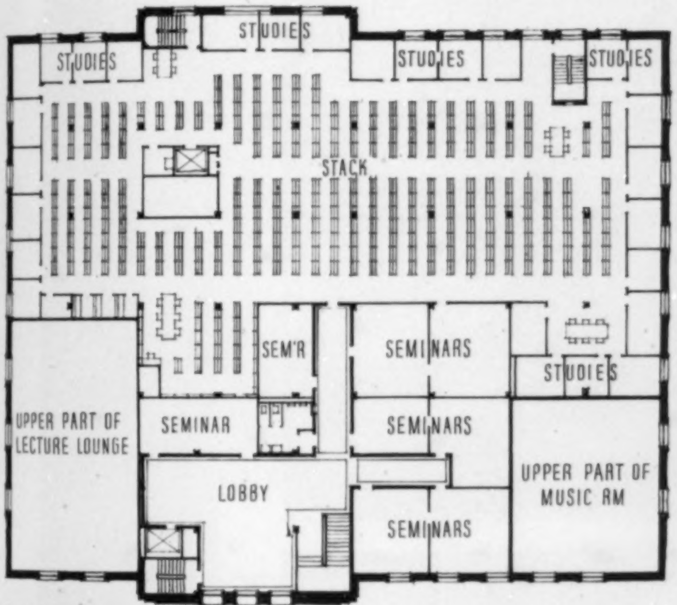


FONDREN
LIBRARY
RICE
INSTITUTE

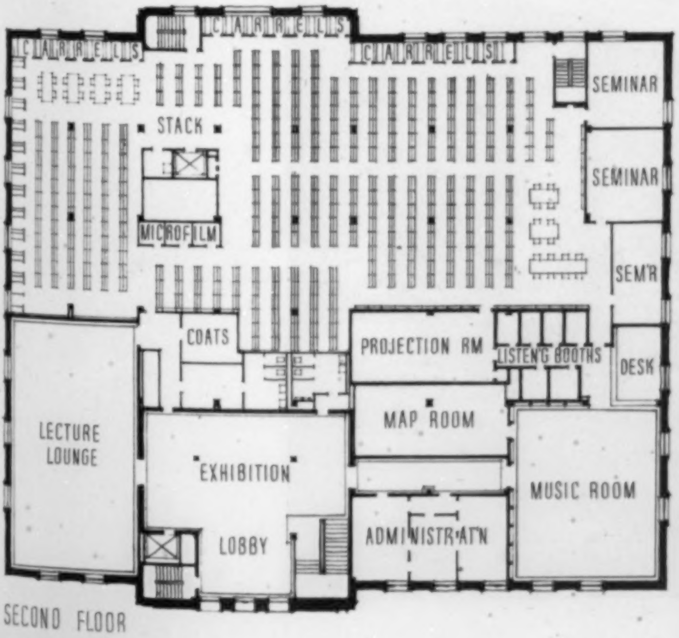

TYPING
STAFF
STACK
STACK
DESK
CATOL'G.
MICROFILM
TYPING
DESK
TECHNOLOGICAL READING ROOM
CIRCULATION
BIBLIOGRAPHY
LIBERAL ARTS READING ROOM
DESK
LOBBY
REFERENCE READING ROOM
CLOISTER
0 10 20 30 40 50
NORTH

FIRST FLOOR

Burt Moritz Photos


STUDIES
STUDIES
STUDIES
STUDIES
STACK
SEM'R
SEMINARS
STUDIES
UPPER PART OF LECTURE LOUNGE
SEMINAR
SEMINARS
LOBBY
UPPER PART OF MUSIC RM
SEMINARS

THIRD FLOOR


CARRELS
CARRELS
CARRELS
SEMINAR
STACK
SEMINAR
MICROFILM
SEM'R
COATS
PROJECTION RM
LISTENG BOOTHS
DESK
LECTURE LOUNGE
MAP ROOM
EXHIBITION
MUSIC ROOM
LOBBY
ADMINISTR'ATN

SECOND FLOOR

Fondren Library at Rice Institute is both a liberal arts and a technical institution in which the need for cross-referencing, often from one field to another, and integration of research with teaching, are well provided for. Books and materials come into the basement, are processed there and in first-floor workrooms, and proceed to the stacks; here they are readily accessible to special rooms (scientific, technical, general arts, music, maps, microfilm, etc.) and to study alcoves (carrels). For flexibility, reading and stack spaces interpenetrate; space can be allotted as circumstances require.

Facing page: top, main circulation desk; bottom, carrels. Above: music reading room

FONDREN LIBRARY, RICE INSTITUTE

Photos: right, music and fine arts room; below, lecture lounge showing rearrangement. Building is air conditioned; construction is concrete frame, brick and tile exterior walls, marble trim. Interior has extensive acoustic treatment; reading, circulation rooms have cork floors

Burt Moritz Photos

COLLEGE BUILDINGS

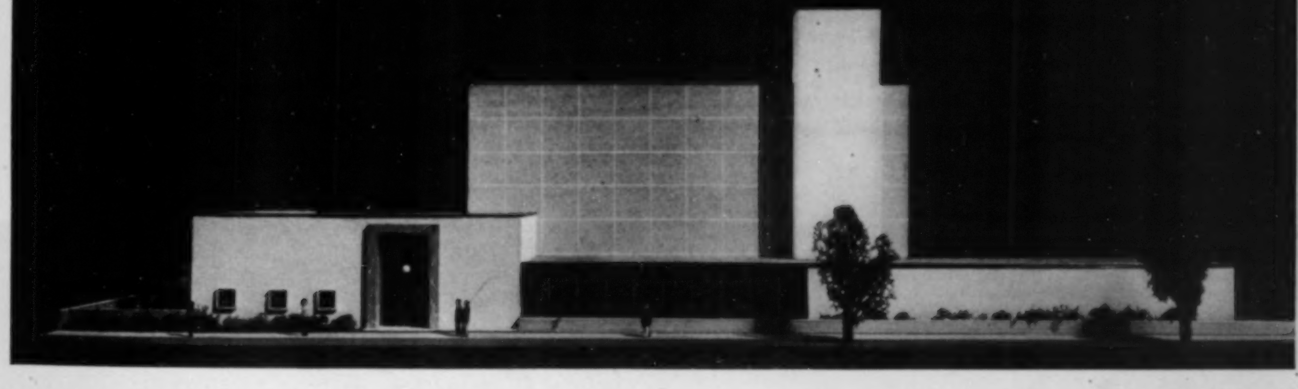
RESEARCH DATA POOLED IN CENTRAL LIBRARY

Midwest Interlibrary Center

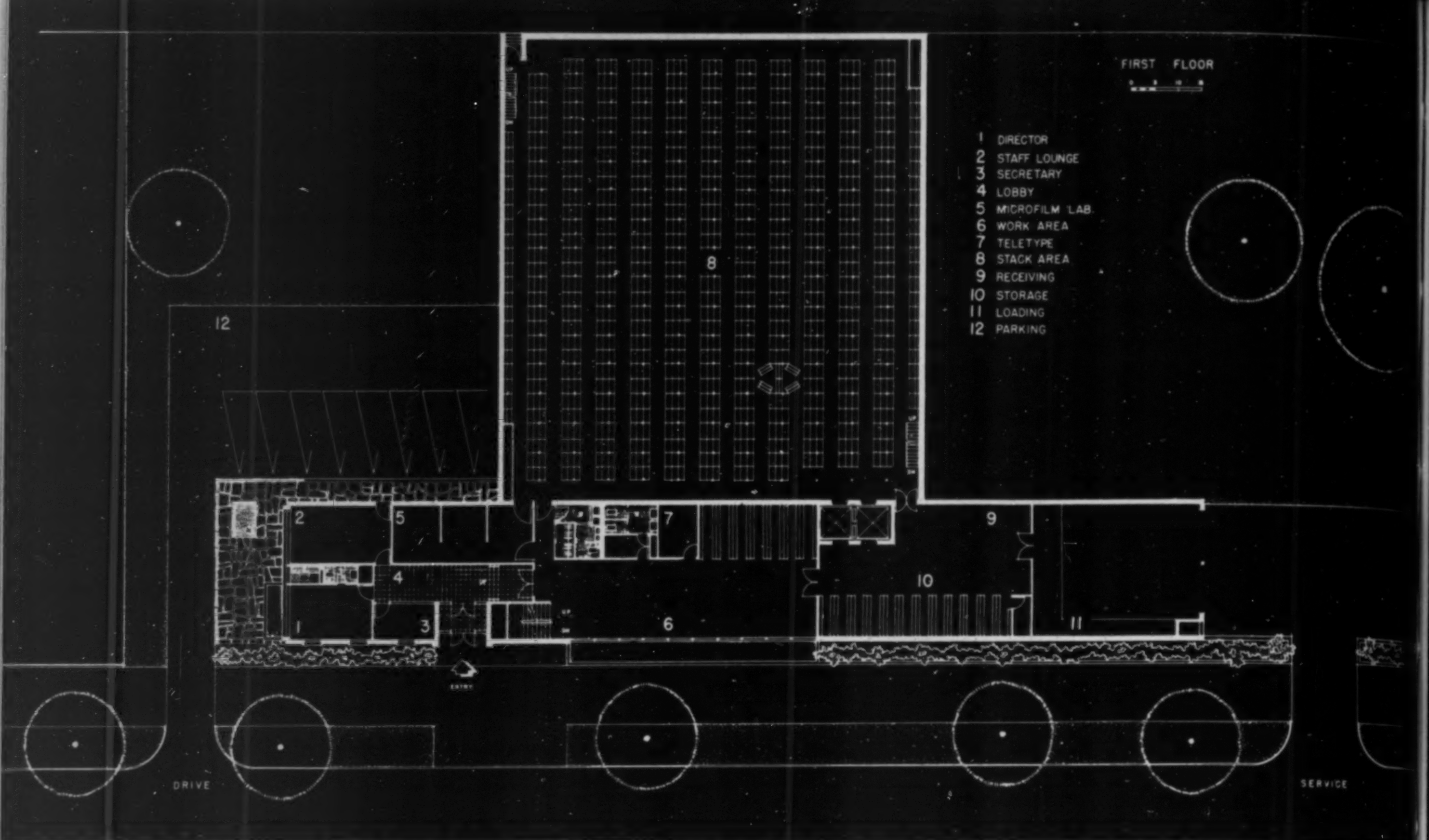
Chicago, Ill.

Shaw, Metz and Dolio

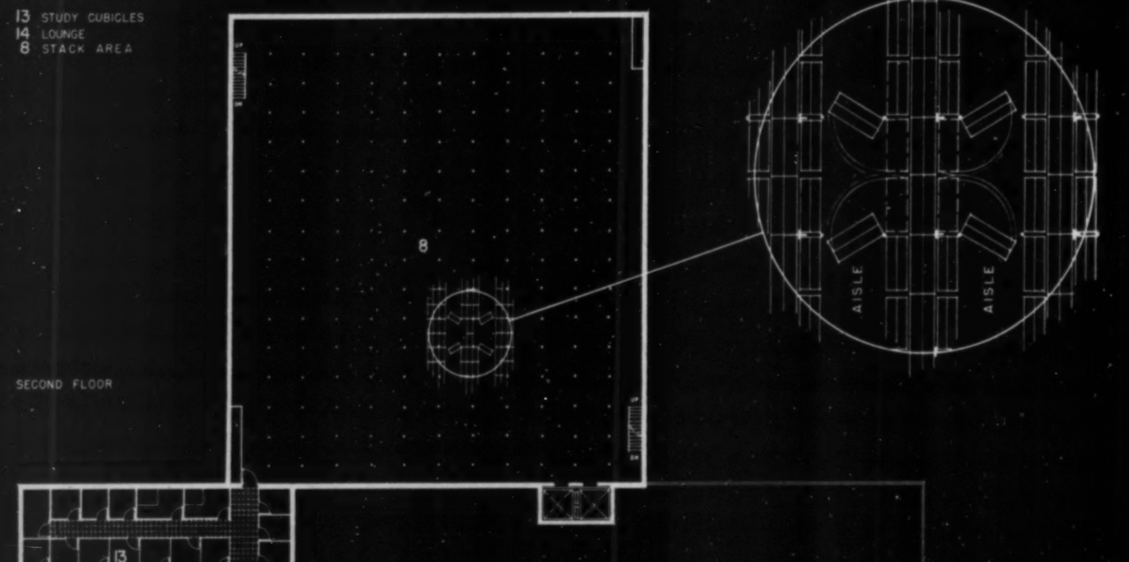
Architects

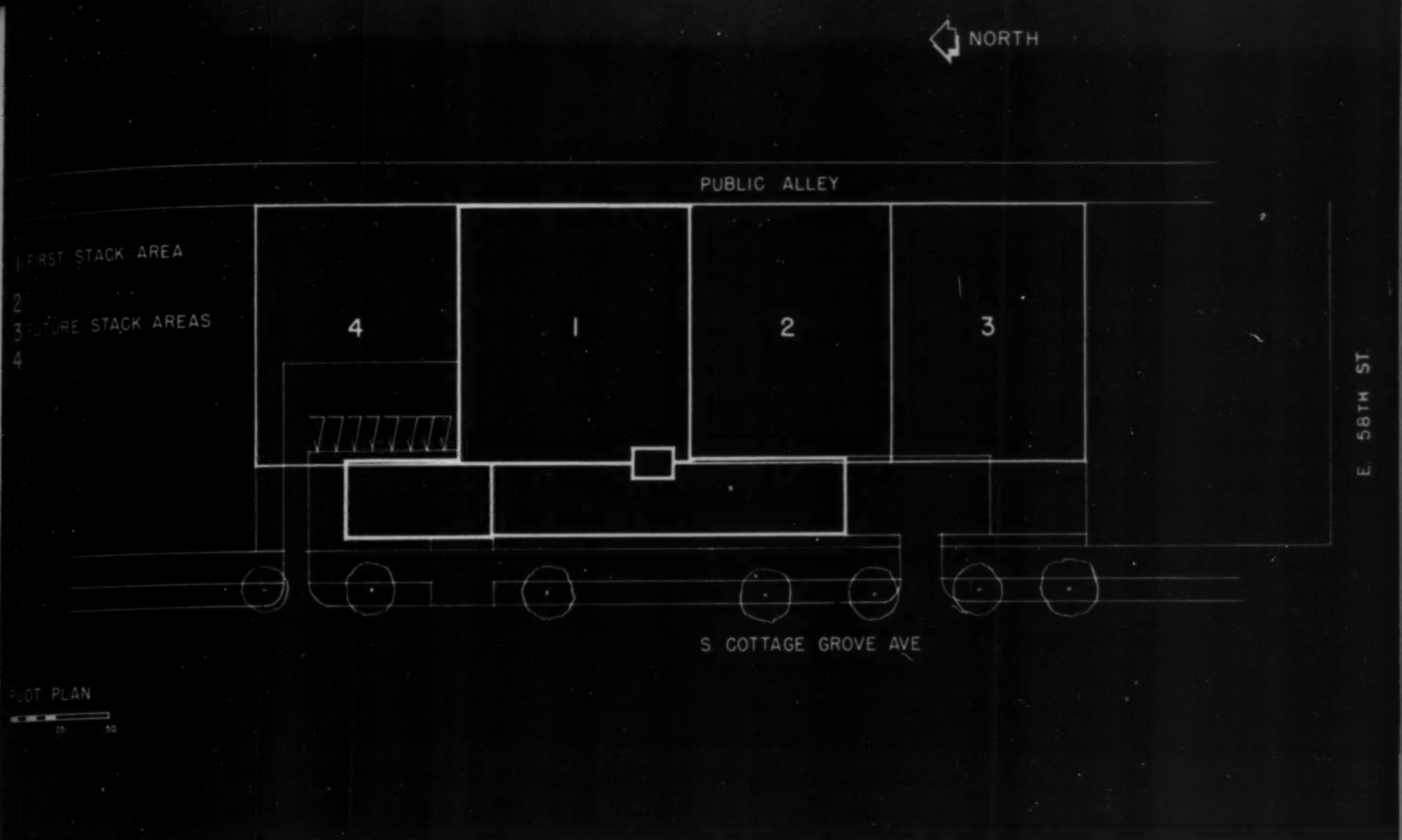


MIDWESTERN universities have been accumulating materials for research for years. However, it has become apparent that not enough copies of all data are available for all libraries; that costs of assembly are prohibitive; that much data are relatively little used. In October 1949 a group of (at present, 11) midwest colleges and universities formed the Midwest Interlibrary Association, which established the Midwest Interlibrary Center; Ralph T. Esterquest is the Center's Director. To quote Mr. Esterquest, the Association believes that ". . . now is the time to reexamine library policies . . . to take a bold stand against unconditional acceptance of traditional practices." The Association seeks to prevent ". . . duplication, confusion and fragmentary service . . ."


FIRST FLOOR
1 DIRECTOR
2 STAFF LOUNGE
3 SECRETARY
4 LOBBY
5 MICROFILM LAB
6 WORK AREA
7 TELETYPE
8 STACK AREA
9 RECEIVING
10 STORAGE
11 LOADING
12 PARKING
ENTRY
DRIVE
SERVICE

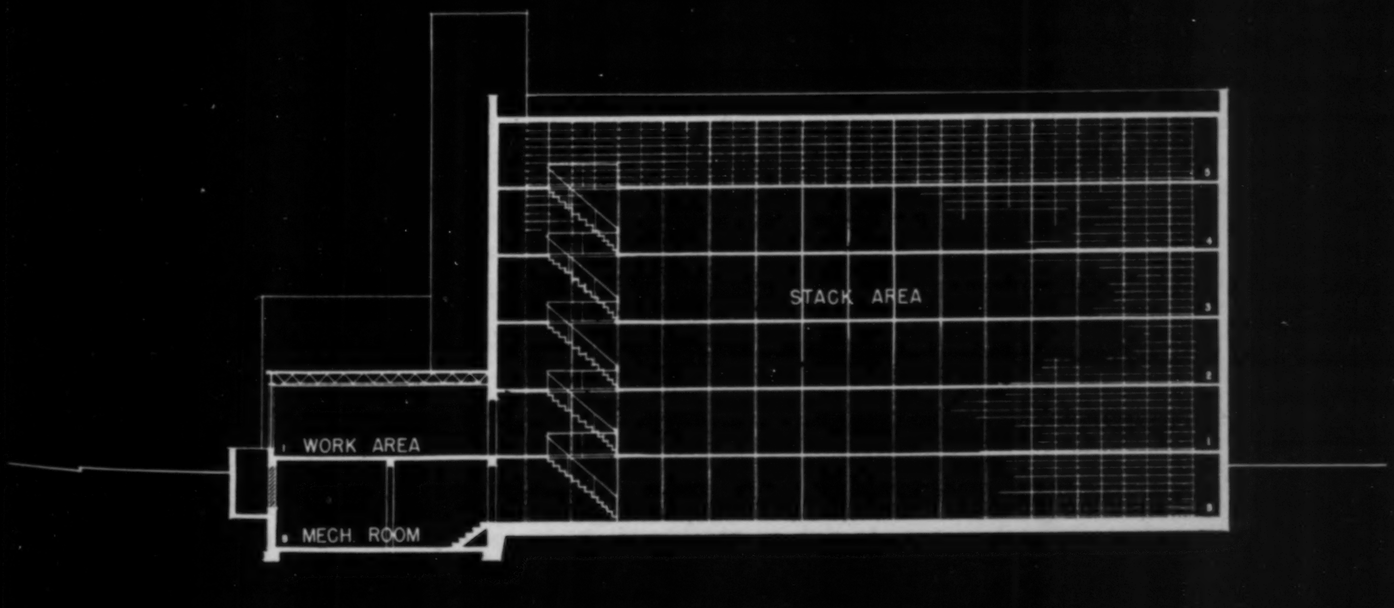
The first structure for Midwest Interlibrary Center is to be built on land donated by the University of Chicago, on whose campus the infant organization is now housed. Among its projects are a complete collection of publications of the 48 states, textbook collections, foreign dissertations, house organs, college catalogs, microfilm newspaper collection, and a joint-acquisitions proposal for purchasing expensive research items not now in any member library. The first stack unit (above and below) is to house 2¼ million volumes in triple rows of double-faced, pivoted stacks, with wide (3 ft 4 in.) aisles to facilitate truck passage.


13 STUDY CUBICLES
14 LOUNGE
8 STACK AREA
SECOND FLOOR
8
13
14
AISLE
AISLE


NORTH
PUBLIC ALLEY
1 FIRST STACK AREA
2
3 FUTURE STACK AREAS
4
4
1
2
3
E. 58TH ST
S COTTAGE GROVE AVE
25
50

PLOT PLAN

Above is the Center's scheme for eventual expansion to accommodate nearly 10 million volumes or their equivalent. Important in the whole concept are provision of sufficient convenient carrels (cubicles) for visiting scholars, and servicing by teletype and truck transport for incoming and outgoing books for member universities. Although some researchers are concerned at having even infrequently-used materials some distance from the home campus, the Center's plans have been favorably received when it has been pointed out that otherwise data might not be available at all, and that items will usually be available on 24-hour service.


STACK AREA
WORK AREA
MECH ROOM
5
4
3
2
1
B

SECTION

GEORGE H. LANIER
MEMORIAL HOSPITAL

FIRST OF THE HILL-BURTON HOSPITALS

George H. Lanier Memorial Hospital, Langdale, Ala.

While this hospital was the first one approved under the Hill-Burton Act program, it is perhaps more interesting as an example of planning a hospital for a special need. It is a 90-bed general hospital, planned for considerable expansion, planned also for specific requirements of an area badly in need of health facilities as well as hospital beds. It is planned, further, to fit into the coordinated hospital program, and thus to logically supplement other hospital facilities, most of them yet to be built. It is characterized as a "district" or "intermediate" hospital in the coordinated scheme.

The federal aid brought to fruition a voluntary campaign begun many years ago and interrupted by the war. The Chattahoochee Valley area, with 38,000 population, was virtually without hospital facilities, and George H. Lanier and other industrialists began the campaign; employees and citizens added their contributions. This genesis led to one of the hospital's special features — health facilities for the periodic examination of all industrial workers in the area (first floor plan, south wing).

Under the circumstances, the basic design objective was flexibility for expanding needs. The plan as developed may be expanded to about twice the bed capacity without much disturbance to the operation of the first unit. The basic fundamentals are provided so that there will be ample space for general stores, central supply, surgery, kitchen, laundry, administrative offices, diagnostic facilities and boiler plant.

The site selected, at Langdale, Ala., is 23 acres on a beautiful bluff overlooking the alliterative Chattahoochee River. Aside from the consideration of rural peace and quiet, the site is roughly in the center of the area served. The hillside location has the advantage of providing full window height for the river side of both basement and sub-basement. Still lower on the hill, the boiler plant does not block the view from patients' rooms, and prevailing breezes take stack gases away from the hospital building.

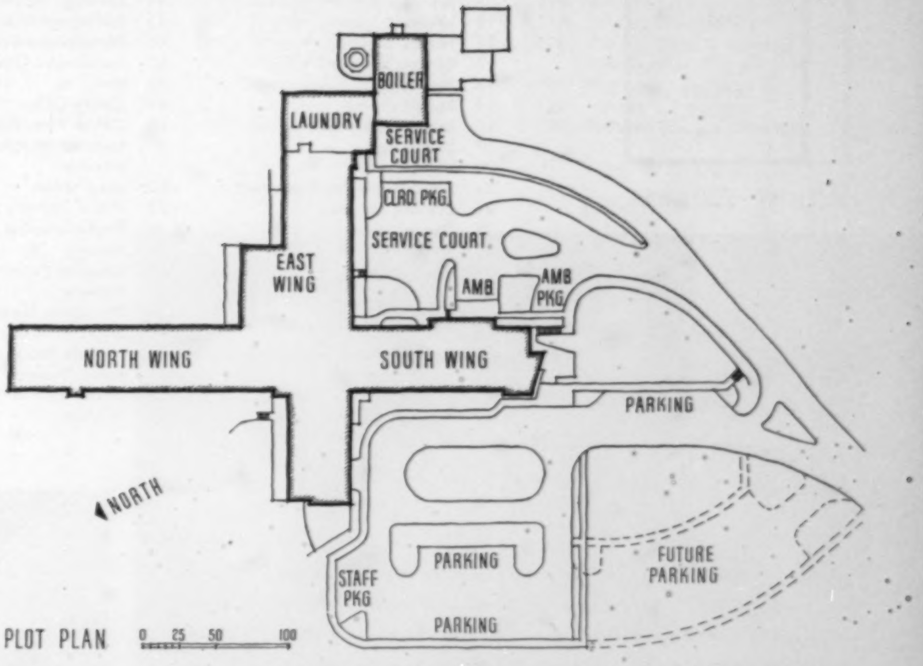
The river view was a factor also in the disposition of patients' rooms, which face east and west, in the large north and south wings of the cruciform plan. And this type of plan works well in achieving the desired flexibility. The major adjunct facilities are in the east wing, and will keep their central position even if other wings are expanded. In fact virtually any of these facilities could be expanded themselves, without changing other layouts. This is an extra precaution, as they are already sized for approximately double the present bed capacity.

The building has reinforced concrete frame with a warm gray face brick and clay tile exterior wall. Interior walls are tile, with "institutional" finishes chosen for easy maintenance, with ceramic tile walls where cleanliness is a factor, asphalt tile floors, plaster walls. Color schemes and decorations, on the other hand, are anything but "institutional." Patients' rooms use soft blues, greens, cream, and peach colors, with the wall at the head of the bed lighter than other walls, and ceilings the same as the darker walls, to prevent glare and eye strain for the patient in bed.

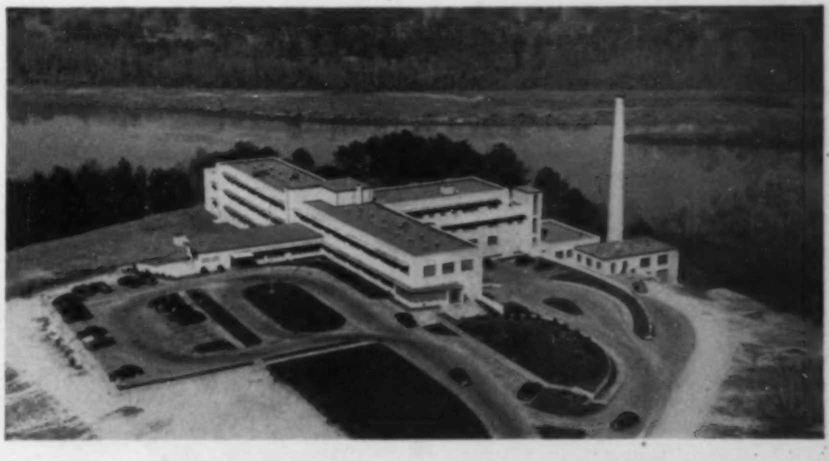
Robert and Company Associates

Architects and Engineers;

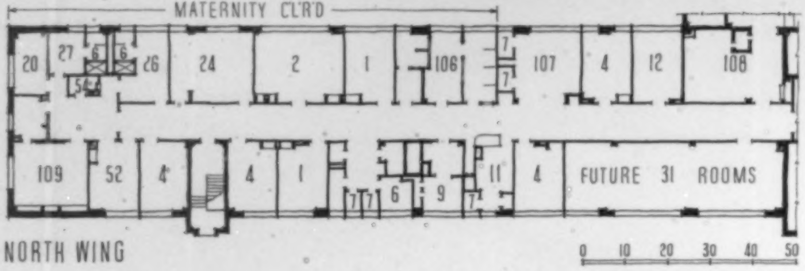
Jesse M. Shelton, Associate Architect


BOILER
LAUNDRY
SERVICE COURT
CLRD. PKG.
SERVICE COURT
EAST WING
AMB
AMB PKG.
NORTH WING
SOUTH WING
PARKING
NORTH
STAFF PKG
PARKING
FUTURE PARKING
PARKING
PLOT PLAN
0 25 50 100

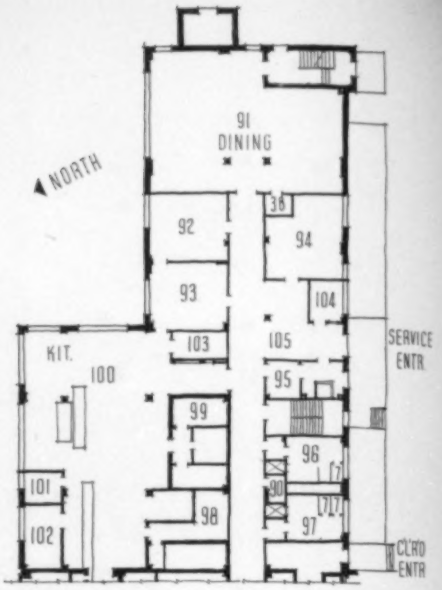
Traffic around the hospital is carefully segregated and controlled by the rather complicated scheme shown in the site plan and the aerial photograph below. Main patient and visitor traffic comes to the high level, to outpatient entrance and main entrance in the administrative wing, with a parking area for staff cars and a larger one for visitors. In the court at the next lower level are the main service entrance and the ambulance (emergency) entrance, with special parking space for ambulances. At the still lower level there is another service entrance for laundry and boiler room



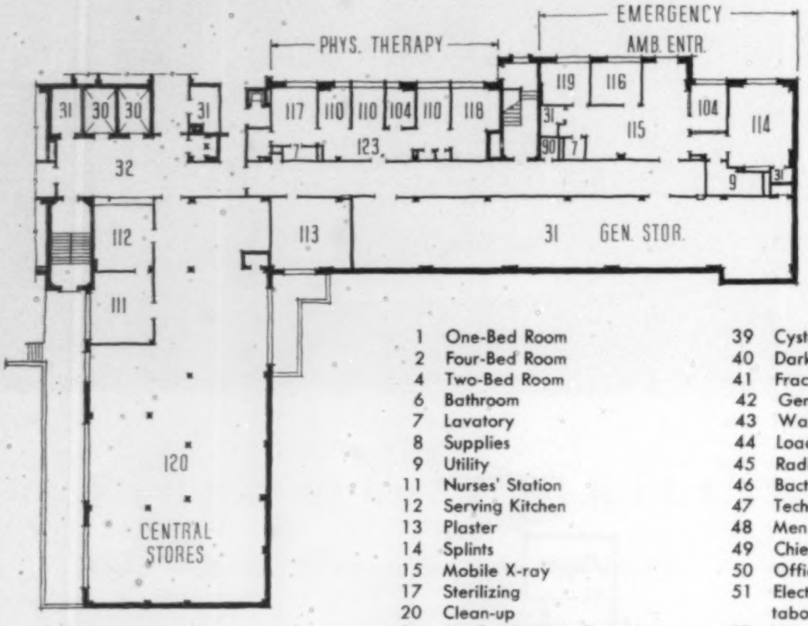
Gabriel Benzur Photos


MATERNITY CL'R'D
20
27
6
6
56
26
24
2
1
106
7
7
107
4
12
108
109
52
4
4
1
7
7
6
9
11
7
4
FUTURE 31 ROOMS
0 10 20 30 40 50

NORTH WING


NORTH
91
DINING
38
92
94
93
104
103
105
SERVICE ENTR.
KIT.
100
95
99
96
7
101
90
7
97
102
98
CL'R'D ENTR.

EAST WING


PHYS. THERAPY
EMERGENCY
AMB. ENTR.
31
30
30
31
117
110
110
104
110
118
119
116
104
114
31
115
90
7
123
7
32
9
31
112
113
31 GEN. STOR.
111
120
CENTRAL STORES

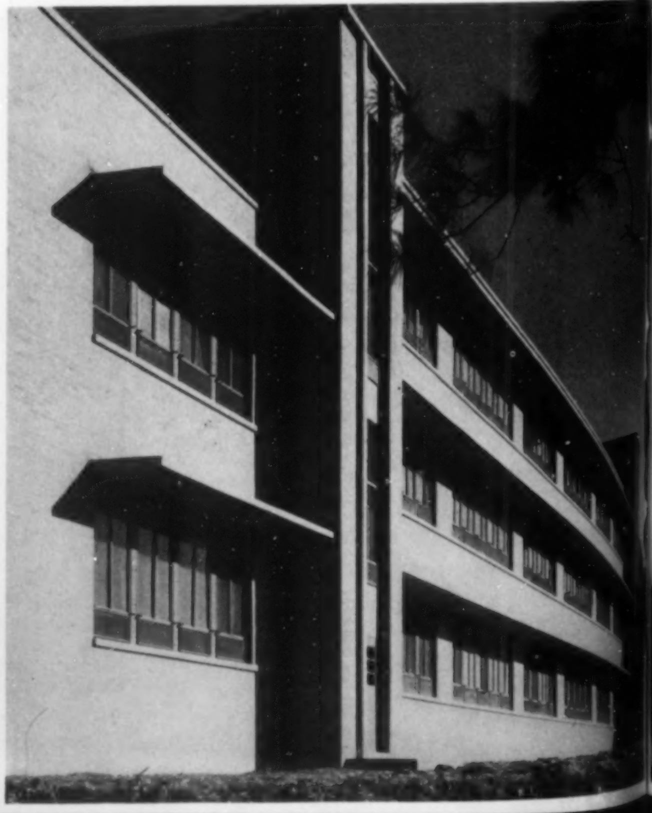
BASEMENT · SOUTH WING

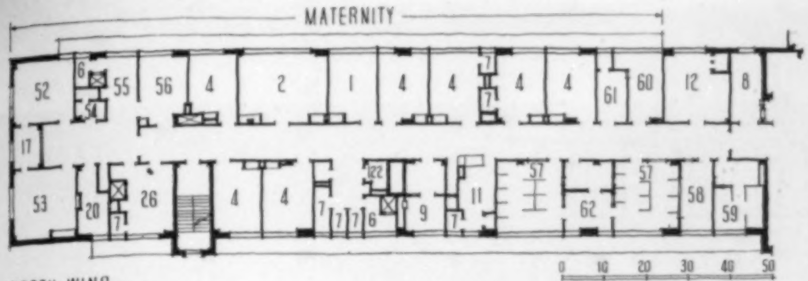
LEGEND

1	One-Bed Room
2	Four-Bed Room
4	Two-Bed Room
6	Bathroom
7	Lavatory
8	Supplies
9	Utility
11	Nurses' Station
12	Serving Kitchen
13	Plaster
14	Splints
15	Mobile X-ray
17	Sterilizing
20	Clean-up
24	Air Conditioning Equipment
26	Doctors' Lockers
27	Nurses' Lockers
30	Elevator
31	Storage
32	Lobby
33	Therapy
34	Control
35	Examination & Rest Room
36	Patients' Waiting
37	Dressing Room
38	Linen
39	Cystoscopy
40	Dark Room
41	Fracture
42	General Laboratory
43	Washing & Sterilizing
44	Loading
45	Radiography & Fluoroscopy
46	Bacteriology Serology
47	Technician's Office
48	Men
49	Chief's Office
50	Office Film Viewing & Filing
51	Electrocardiograph & Basal Metabolism
52	Labor Room
53	White Delivery
54	Sterile Supplies
55	Nurses
56	Labor or Patient's Room
57	Nursery
58	Premature Nursery
59	Suspect Nursery
60	Formula Room
61	Bottle Washing
62	Examination & Work Room
63	Women
64	Admitting Office
65	Business Office
66	Retiring
67	Director of Nursing
68	Secretary
69	Administrators Office
70	Coats
71	Staff Conference
72	Clinic Lobby
73	Social Service
74	Examination
75	Doctor
76	Surgical Dressing
77	General Clinic — Sub-Waiting
78	Maternal Clinic — Sub-Waiting
79	Demonstration
80	Chief Nurse
81	Health Officer
82	Library
83	Medical Records
84	Pharmacy
85	Dental
86	Ear, Nose & Throat
87	Laboratory
88	Recovery
89	Sanitary Engineer

Basement floor, most of which is above grade, makes a good location for emergency suite, physical therapy department and central supplies, with a huge space for general storage. In the north wing the entire basement level is above ground, and can be used for bedroom space, nursery and delivery suite for segregated patients. In the east wing the basement is high above ground, suitable for main kitchen and dining rooms. Patients are served from main kitchen by the tray system, trays being transported by "trayveyors"

First floor (opposite page) separates nicely in the cruciform scheme into the overgrown health clinic and outpatient department in the south wing, administrative area in west wing, X-ray and laboratories in the east wing. The more isolated north section becomes maternity nursing unit, with delivery rooms at far end. Most bedrooms face the river, nurseries across corridor




MATERNITY
52
6
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4
61
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8
17
53
20
26
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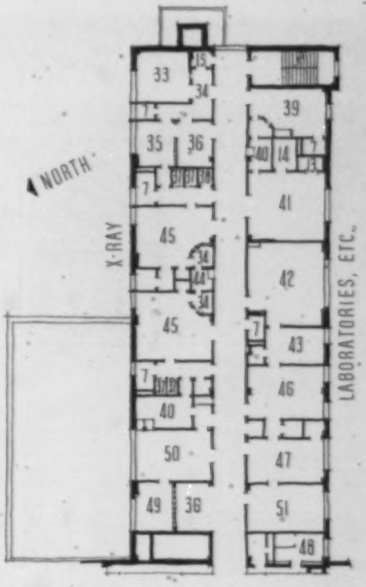
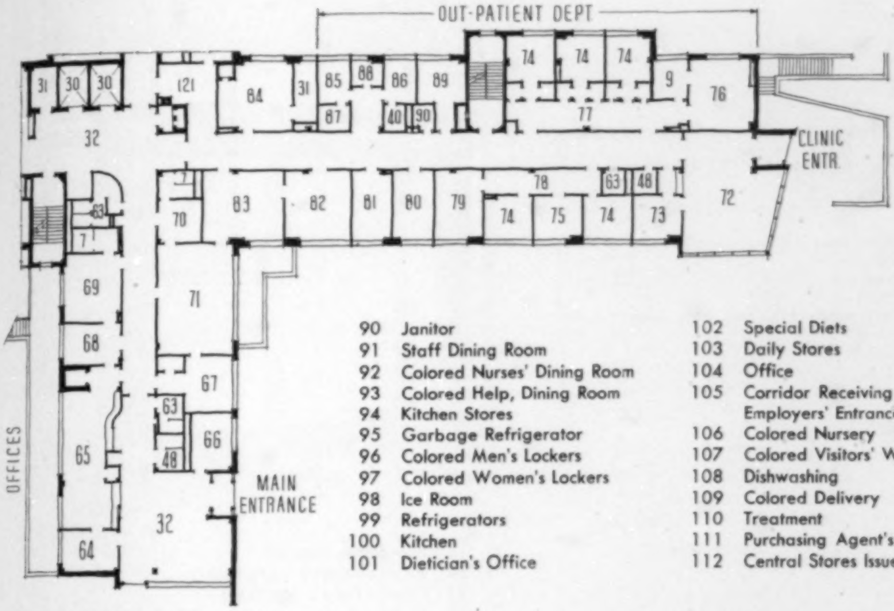
4
7
122
6
9
11
57
62
57
58
59
0 10 20 30 40 50

NORTH WING


NORTH
X-RAY
LABORATORIES, ETC.
33
35
34
39
35
36
40
14
41
45
42
45
43
46
40
50
47
49
36
51
48

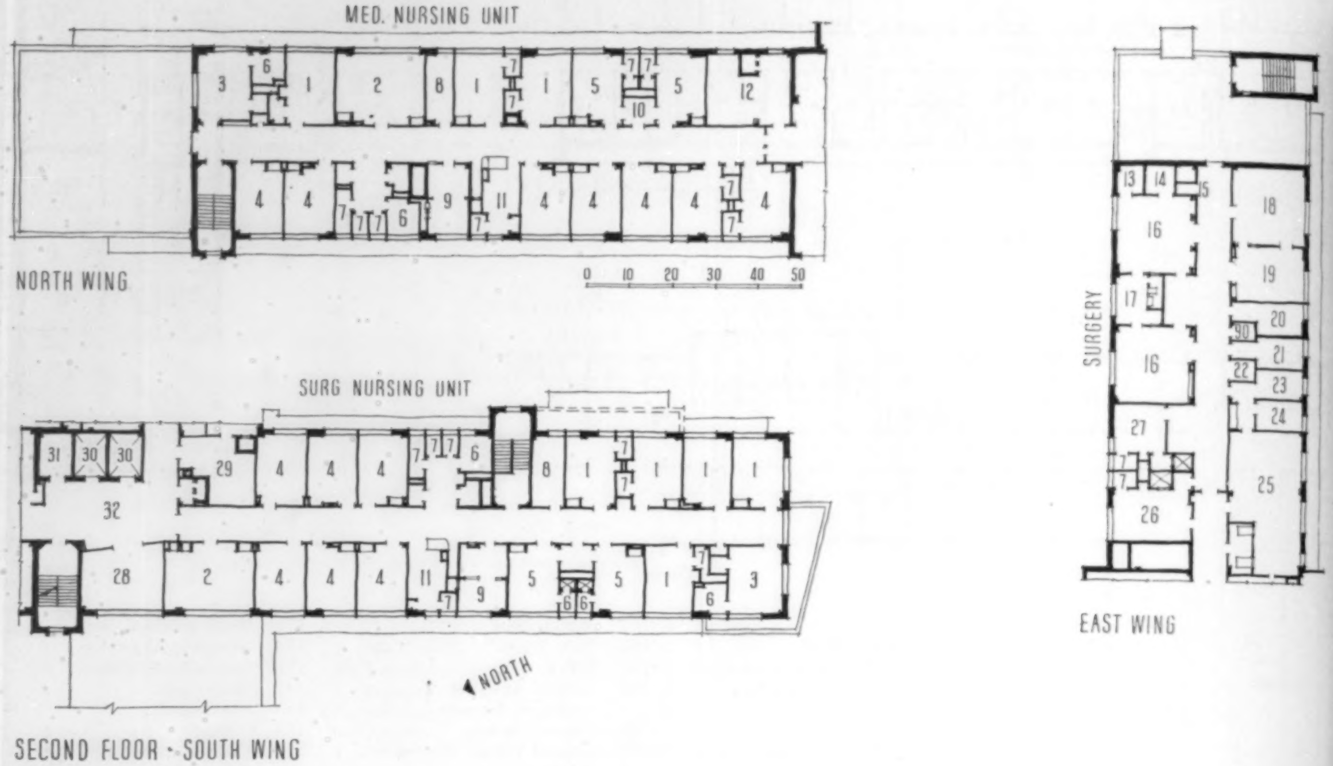
EAST WING


OUT-PATIENT DEPT
31
30
30
121
84
31
85
88
86
89
74
74
74
9
76
87
40
90
77
32
CLINIC ENTR.
70
83
82
81
80
79
78
74
75
74
63
48
73
72
69
71
68
67
63
66
65
48
32
64
OFFICES
MAIN ENTRANCE

FIRST FLOOR - SOUTH WING

90	Janitor
91	Staff Dining Room
92	Colored Nurses' Dining Room
93	Colored Help, Dining Room
94	Kitchen Stores
95	Garbage Refrigerator
96	Colored Men's Lockers
97	Colored Women's Lockers
98	Ice Room
99	Refrigerators
100	Kitchen
101	Dietician's Office
102	Special Diets
103	Daily Stores
104	Office
105	Corridor Receiving & Employers' Entrance
106	Colored Nursery
107	Colored Visitors' Waiting
108	Dishwashing
109	Colored Delivery
110	Treatment
111	Purchasing Agent's Office
112	Central Stores Issue
113	Medical Record Storage
114	Emergency Operation
115	Emergency Waiting
116	Observation
117	Hydrotherapy
118	Exercise
119	Security Observation
120	Central Stores — General & Bulk Supplies
121	Passage
122	Flowers
123	Physical Therapy Waiting

Gabriel Benzur Photos



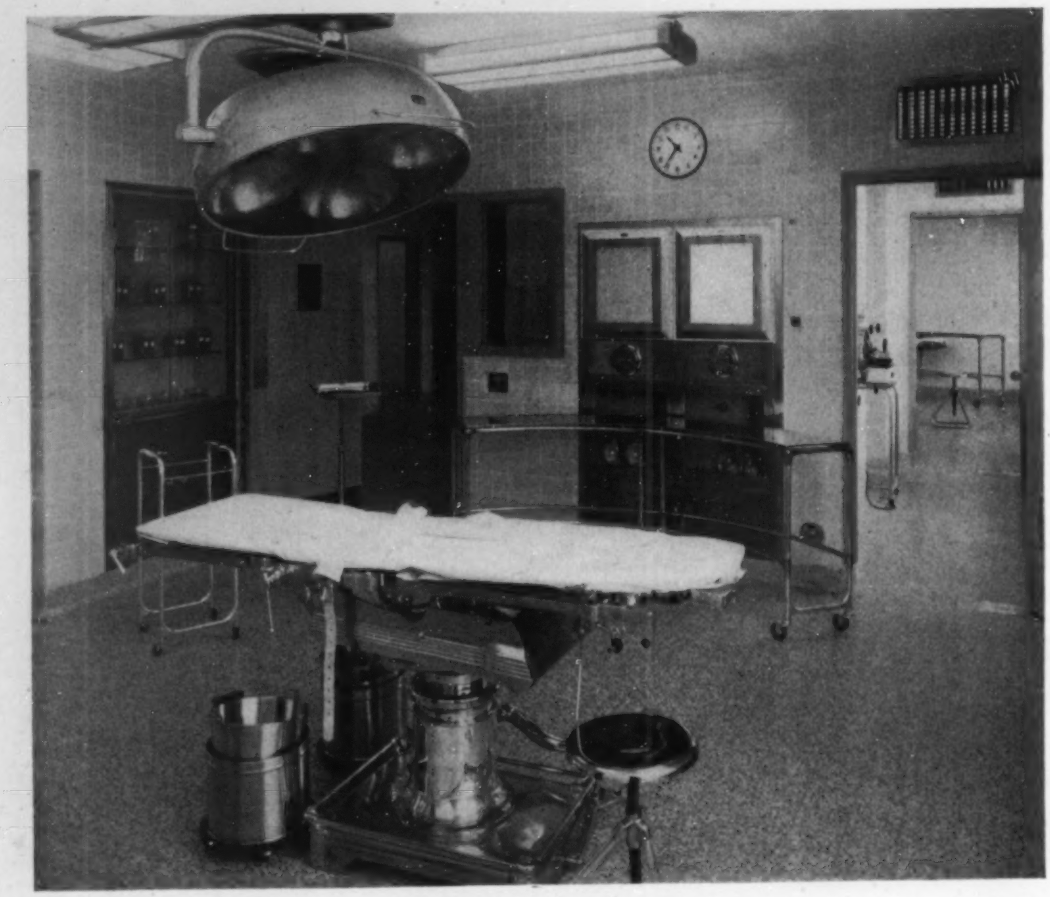
LEGEND

1	One-Bed Room
2	Four-Bed Room
3	Private Room
4	Two-Bed Room
5	Isolation Room
6	Bathroom
7	Lavatory
8	Supplies
9	Utility
10	Sub-Utility
11	Nurses' Station
12	Serving Kitchen
13	Plaster
14	Splints
15	Mobile X-ray
16	Operating
17	Sterilizing
18	Future Scrub-Up, Sterilizing
19	Minor Operating
20	Clean-Up
21	Anesthesia Storage
22	Stretchers
23	Non-Sterile Supplies
24	Air Conditioning Equipment
25	Central Supply Sterilizing
26	Doctors' Lockers
27	Nurses' Lockers
28	Visitors' Waiting
29	Central Supply Issue
30	Elevator
31	Storage
32	Lobby
90	Janitor

Gabriel Benzur Photos

Second floor has two nursing units, for surgical and medical patients, with the surgical department in the east wing, leading off from the center of the building. Should additional stories be added, this floor would remain the surgical section, a third floor would take medical patients, and there might even be a fourth floor, for pediatrics, which is about as far as future planning can be carried in medicine

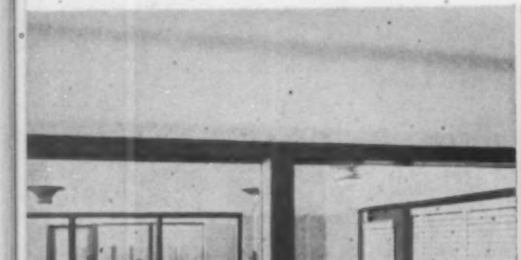
Gabriel Benzur Photos



Major operating room, second floor, east wing

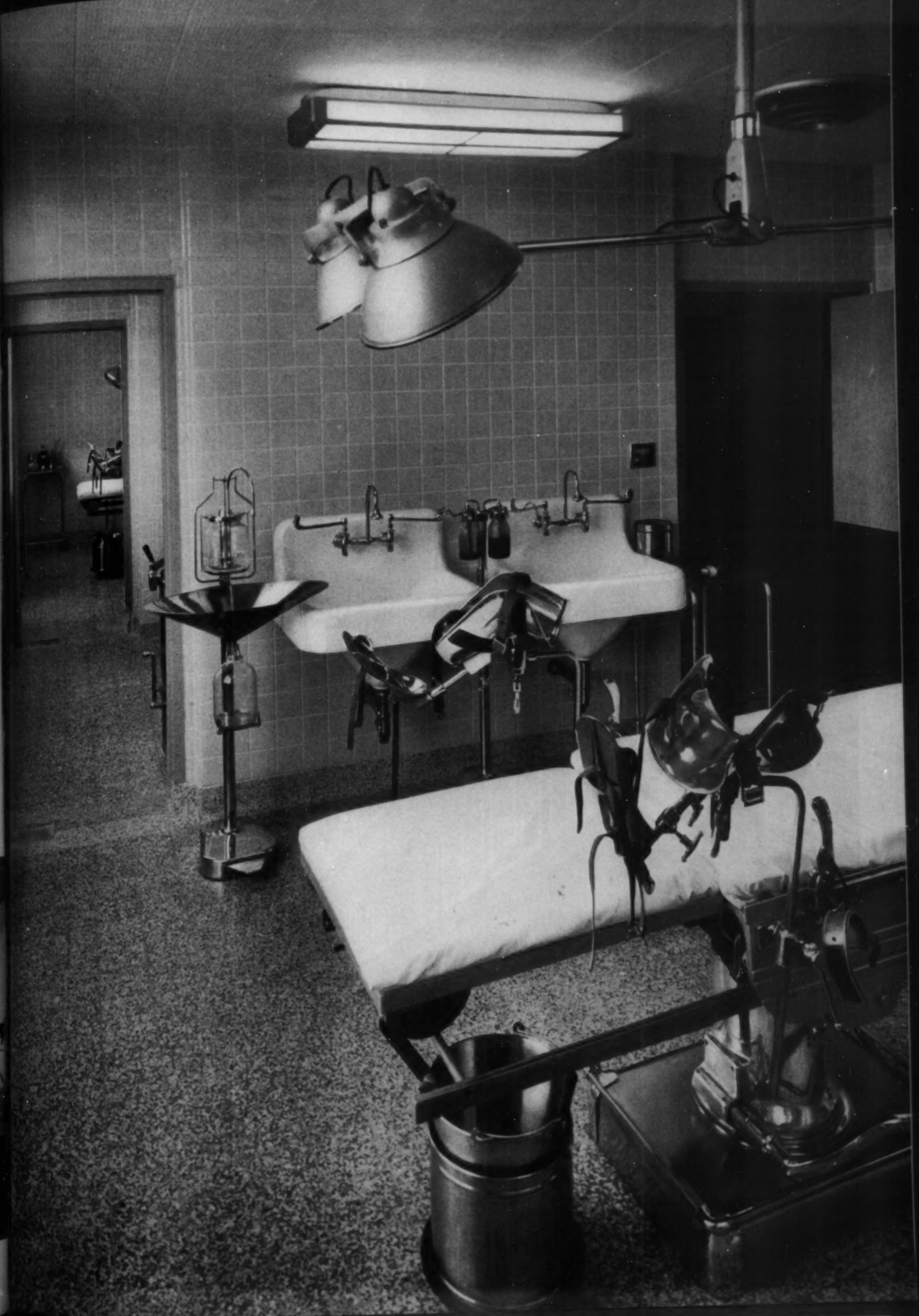
Opposite page, delivery room first floor, north wing

Nursery, first floor



Cystoscopy room, first floor

Typical patient's bedroom

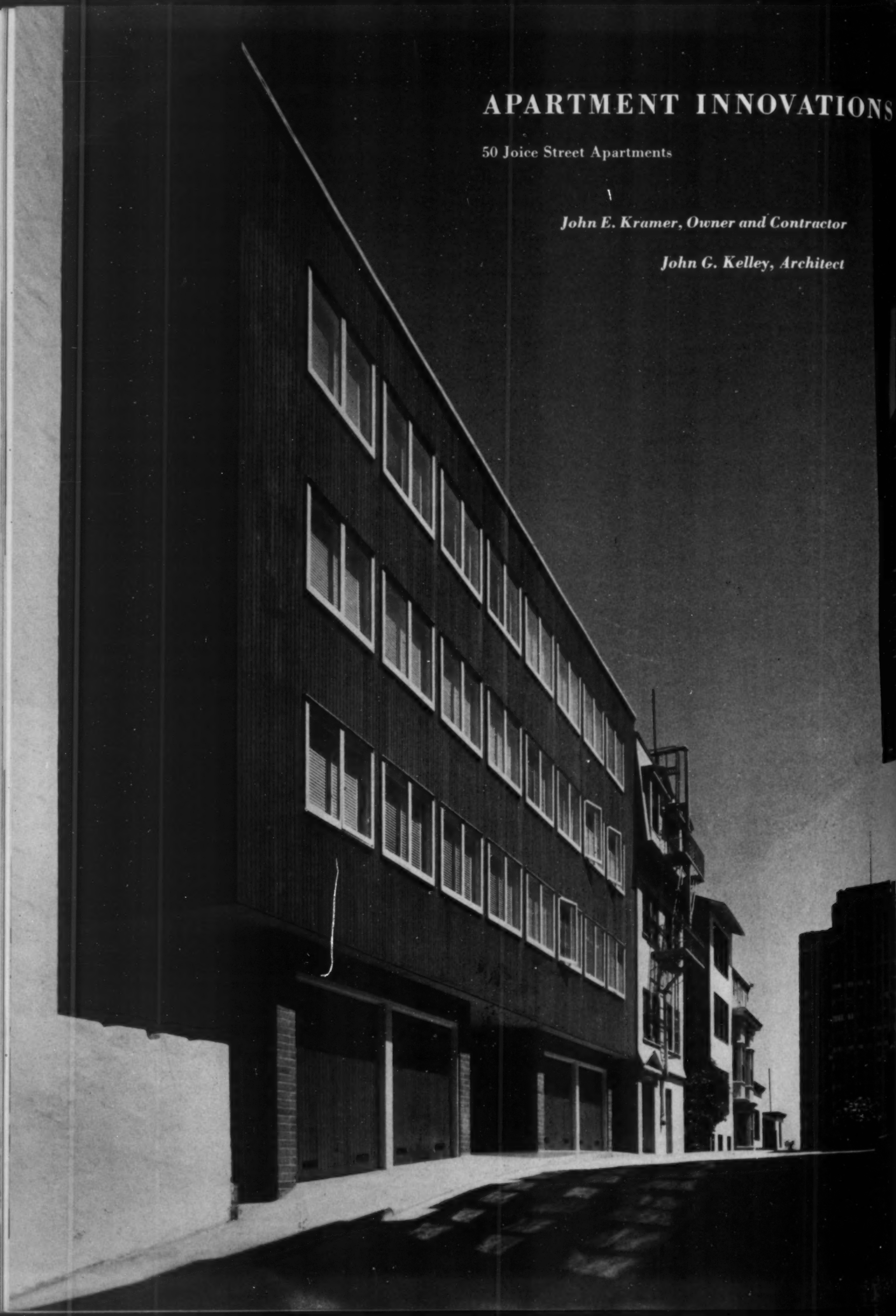


APARTMENT INNOVATIONS

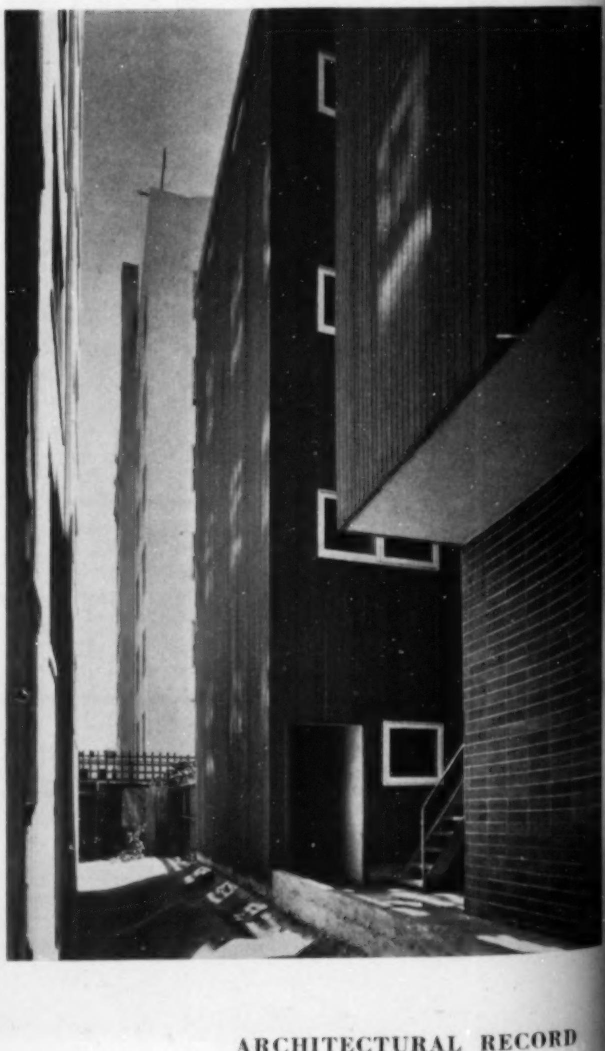
50 Joice Street Apartments

John E. Kramer, Owner and Contractor

John G. Kelley, Architect



The 50 Joice Street Apartments are of wood frame construction, with stained redwood exterior. Interior walls are of integral color plaster. Windows, both fixed and casement, are of wood. Walls between apartments are double, with acoustic insulation between



Photos this page Roger Sturtevant; opposite, Ezra Stoller: Pictor

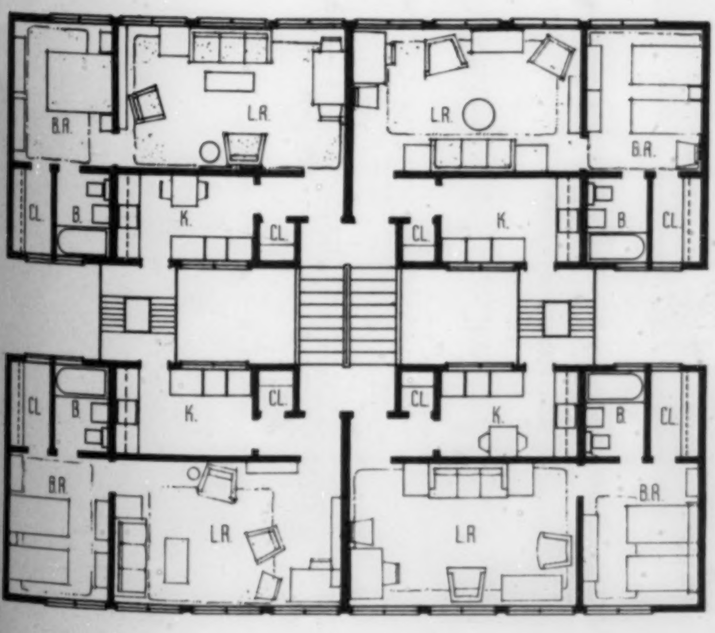
FOR SAN FRANCISCO

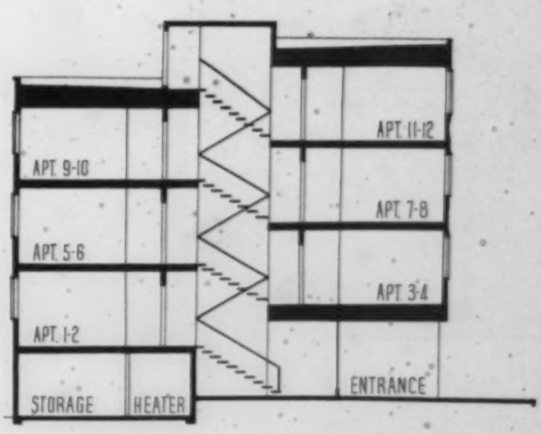
Roger Sturtevant Photos

A narrow San Francisco street tests the ingenuity of an architect fairly severely, but by the same token it becomes a good place to demonstrate that quality. The photograph on the opposite page has a before and after suggestion, with the clean, uncluttered simplicity of modern design together with the efforts of an earlier era. Plan and section below illustrate the ingenuity with which fire escapes were kept inside.

The confines of the site coupled with the financial requirements of the project resulted in several innovations. Separation of the building into two units, each 20 by 60 ft, simplified the construction and provided an interior court for vertical circulation and light. Staggering the floor levels of the two units allowed the stairs to span from one to the other in an economical arrangement. The narrow shape of the units puts the long side of the living room and the bedroom on the open side, with kitchens and baths grouped (for economical plumbing) on the court side. Fire escapes are kept off the front of the building, and serve also for the service entrances.

There is perhaps some incongruity between the message of the photographs and that of the floor plans. The apartments are quite small, due partly to the owner's desire to get in the maximum allowable number of rental units, and partly to the location of the property. Joice Street is close to downtown San Francisco, and has a sort of gentle Bohemian character which makes it a logical place for the junior executive or the career girl. Nobody imagines the building appealing to families with children, or even with any accumulation of bulky possessions. In other words the logical tenants find in this building a combination of visual appeal and compact convenience which should make this project pay out rather nicely.

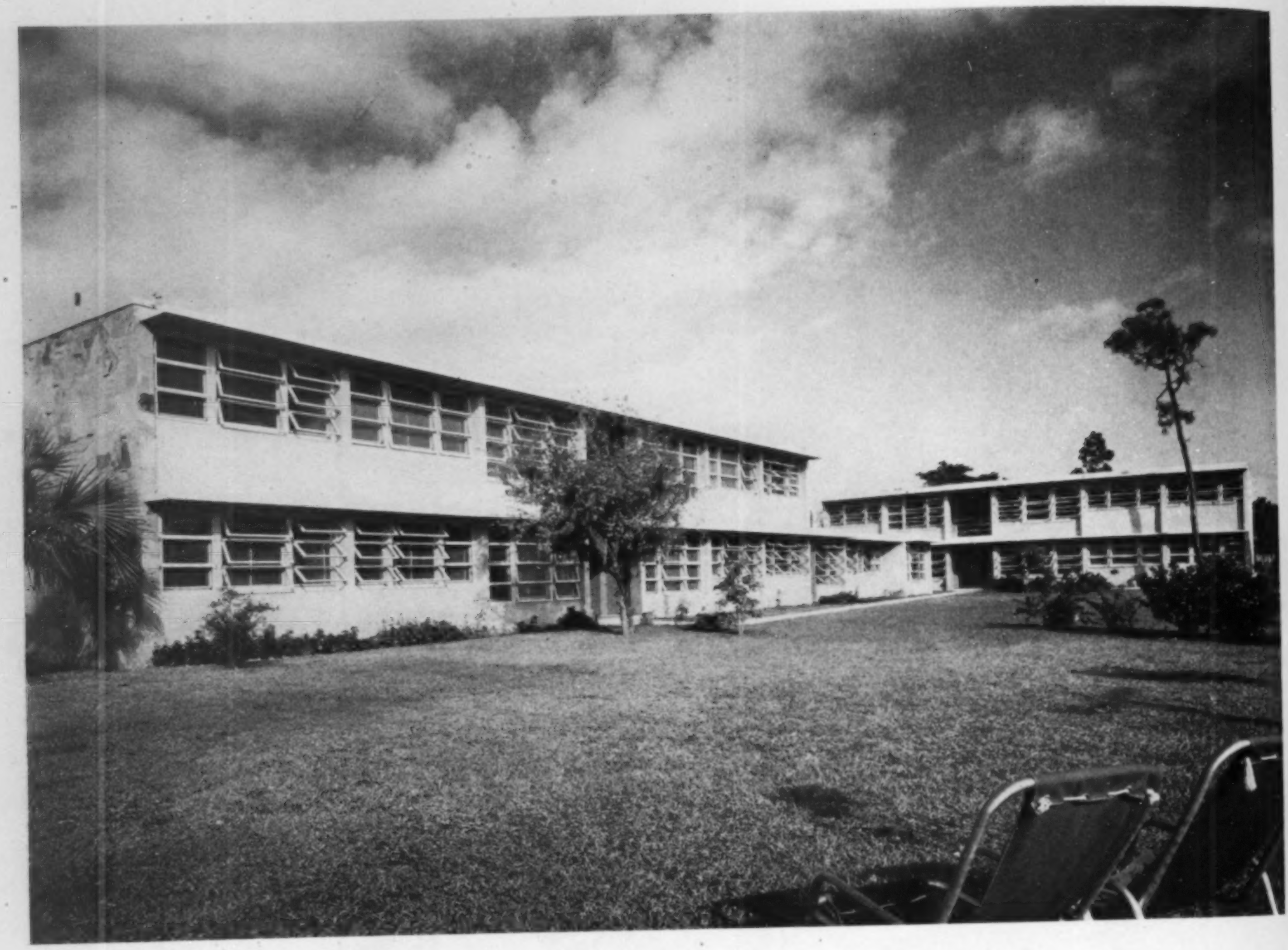




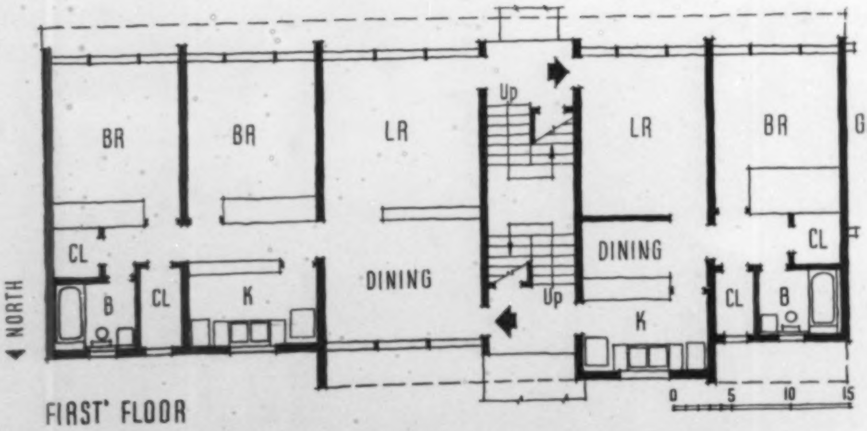
WINDSWEPT APARTMENTS, MIAMI

Robert Law Weed and Associates

Architects – Engineers



Windswept Apartments, Miami (cont.)


BR
BR
LR
LR
BR
GARBAGE AREA
Up
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DINING
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CL
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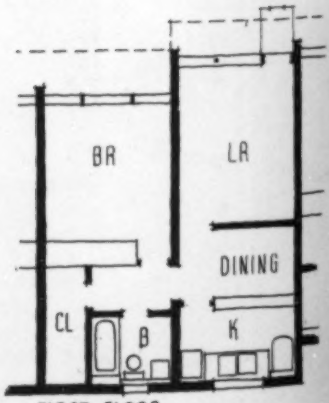
K
NORTH
0 5 10 15
FIRST FLOOR

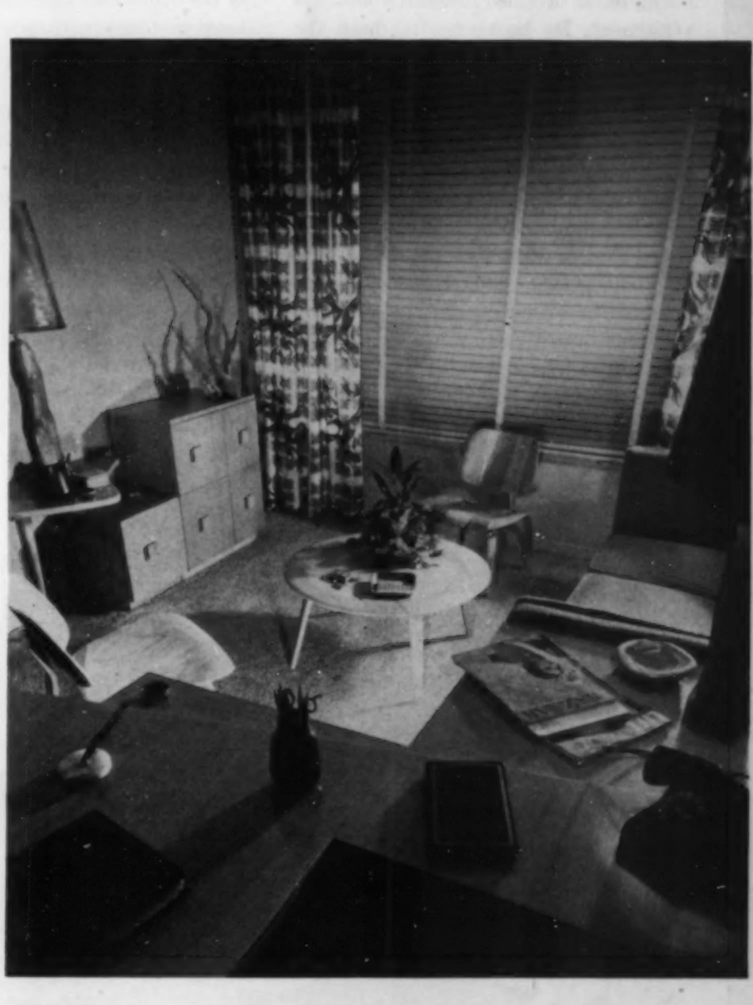

BR
LR
DINING
CL
B
K
FIRST FLOOR

HERE is another of the many current apartment buildings which gave the architects some problems in making something attractive in small room sizes. If you consider these rooms quite small — and the architects do — they are still "somewhat larger than permitted under the then existing FHA criteria." Nevertheless this building has strong appeal for its intended tenants, young business people who want a near-downtown location rather than extensive housekeeping. Moreover, the apartments were furnished by the owner (George Farkas designed the interiors), so it was possible to control the scale of the rooms.

Perhaps the nicest feature — and the one which gives the buildings their character — is the provision for cross ventilation. The large awning-type windows make the rooms truly "windswept" and the projected overhangs above protect the windows not only from sun but also from the sudden downpours which the Miami chamber of commerce doesn't deny. Thus people who are away all day may leave windows open without too much concern for the rain.

Good storage space is another feature worthy of note. This may be, as the architects suggest, an especial need in Florida, but even in the cold north tenants seem to appreciate huge closets for extra things, and full-wall cabinets to bedrooms.

Buildings are of reinforced concrete column and beam construction. First floor is a slab on fill, second floor a light slab on precast concrete joists. Exterior walls are of concrete block with painted concrete surfacing. Interior walls are of sand finish plaster. Windows are wood, with inside screens and Venetian blinds.



Ezra Stoller: Pictor

MODULAR COORDINATION

. . . It means economy now

It's been estimated that over 30,000 individual parts, materials and pieces of equipment must be assembled in building the average house. In order to put together the components of houses, as well as all buildings, more efficiently, the building industry is turning more and more to principles and methods used by production-line manufacturers: factory-built units, sub-assemblies and, probably most important, dimensional standardization (modular coordination).

Modular coordination has a thorough background of study, research and development. Its backbone has been the standardization project sponsored jointly by A.I.A. and The Producers' Council, Inc., and under the auspices of the American Standards Association.

As a result of this project, the principles are well established, and an increasing number of manufacturers are standardizing on a modular basis.

The Housing and Home Finance Agency has undertaken a program directed toward getting a wider understanding of what modular coordination means and promoting its application by architects and builders.

Their first educational effort was a booklet directed to both the layman and the building industry. Now in preparation are "how to do it" manuals, one for the architect and one for the builder.

As further evidence of progress, the A.I.A. and The Producers' Council announced the appointment of William Demarest Jr., architect, as Secretary for Modular Coordination in the Dept. of Education and Research of A.I.A.

Mr. Demarest will act as secretary of the American Standards project; will keep in touch with government activities in this field; and will contact architectural and industrial groups as part of a technical education program.

Modular coordination simply means relating the dimensions of building materials and equipment to each other and to plans so that they fit with a minimum of cutting and fitting.

Modular coordination translated into economics means savings through reduction in field cutting and waste, greater use of standard products and simplification in laying out and detailing buildings.

The first step in coordinating building components is the standardization of product dimensions. It's vitally important that the dimensions of companion as well as competing building materials follow the same standard. For instance, if masonry units came in one set of standard sizes and window frames in another, the masonry would still have to be cut to fit.

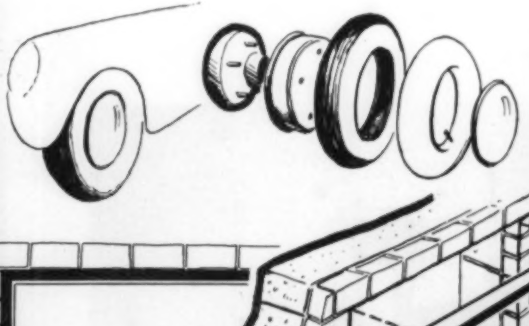
Brick, wood and steel window frames, wood doors, glass block, structural tile, concrete block and flue linings are now available based on a 4-in. standard or module.

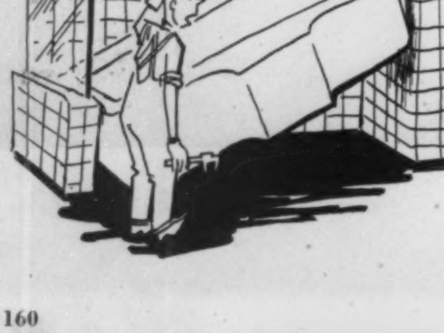
This standard was chosen as most logical by committees widely representing the building industry because: (1) it is small enough for ample freedom in architectural design and for flexibility; (2) it is large enough for manufacturers to reduce the number of stock sizes and still satisfy demand; (3) it coincides with the dimensions of many building materials already standardized.

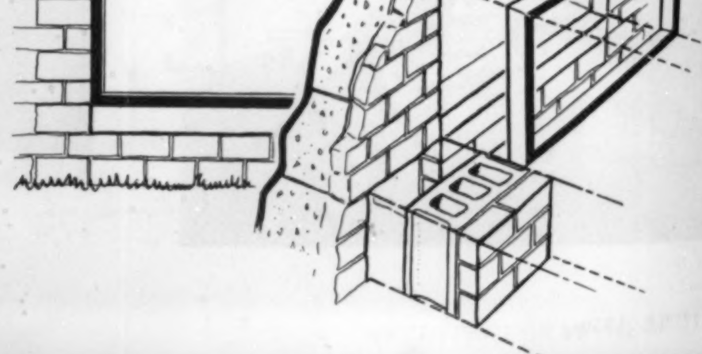
Modular coordination encompasses three interrelated activities: (1) production of all types of building parts on the uniform system of dimensioning;

In modular coordination, the building industry is applying one of the principles common to other industries—dimensional standardization. Automobile wheel parts designed on this principle, but made by different manufacturers, fit exactly. Modular products made by building material manufacturers fit in the same way. With non-modular design and materials, parts often must be fitted on the site

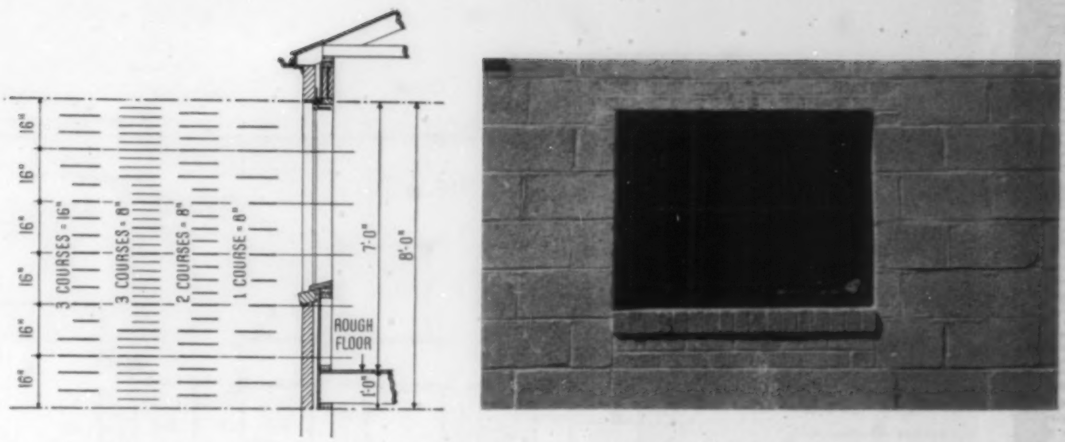
Sol Ehrlich







The drawing shows how modular sizes of masonry permit interchangeability in the Industry Engineered House. In the photo notice what a struggle it was to make the concrete blocks work in this non-modular design



(2) use of coordinated assembly details which fit the uniform sizes parts into into the building; and (3) preparation of building plans and working drawings in accordance with the same uniform system of dimensioning and coordinated assembly details.

The key to proper use of modular coordination is the assembly detail. And it's here that some confusion exists about the sizes of modular parts. The size of a modular product need not be in even multiples of four inches. In fact, a dimension might end up with a fraction of an inch.

First of all, parts are coordinated into a detail so that there is no need for field cutting and fitting, for instance, a window frame into a masonry wall. Then this window frame, although its dimensions might be in fractions, should have alternate sizes in multiples of four inches. Thus the same detail, except for dimensioning on plans, works for all sizes if the masonry is also modular.

The modular system lends itself to interchangeability in design. Specifications or materials can be changed without requiring the layout to be changed. At most, a different assembly detail may be substituted.

Although actual dimensions may be fractional, the architect can eliminate these on his plans by using nominal dimensions. This will be taken up in a future article.

Modular coordination works equally well with small and large buildings.

An example of utilizing the modular principle and other engineering methods in the design and erection of small houses is the Industry Engineered House program. Comparative time studies on some of these houses at the University of Illinois, based on the premise of small builder operation, showed that man-hour savings can be 25 per cent or more.

Modular coordination has been highly successful in large building developments such as the Bellevue Hospital Nurses' Home in New York, the administration building of the University of California, L. A., Army base theaters and the 15-acre Postal Concentration Center, Long Island City, N. Y.

Plans for the postal center building, designed by Alfred Hopkins Associates, were completed in 29 working days and the entire construction in 72 working days.

Modular coordination has advantages for each part of the construction industry:

Advantages to the Architect. Simplifies making building layout; fractions and odd sizes can practically be eliminated. Makes possible a change in specifications or substitution of alternate materials without necessitating a redrawn layout. Eliminates the designing and repetitive redrawing of assembly details. Standardization of materials simplifies specifications. Freedom of design is still maintained.

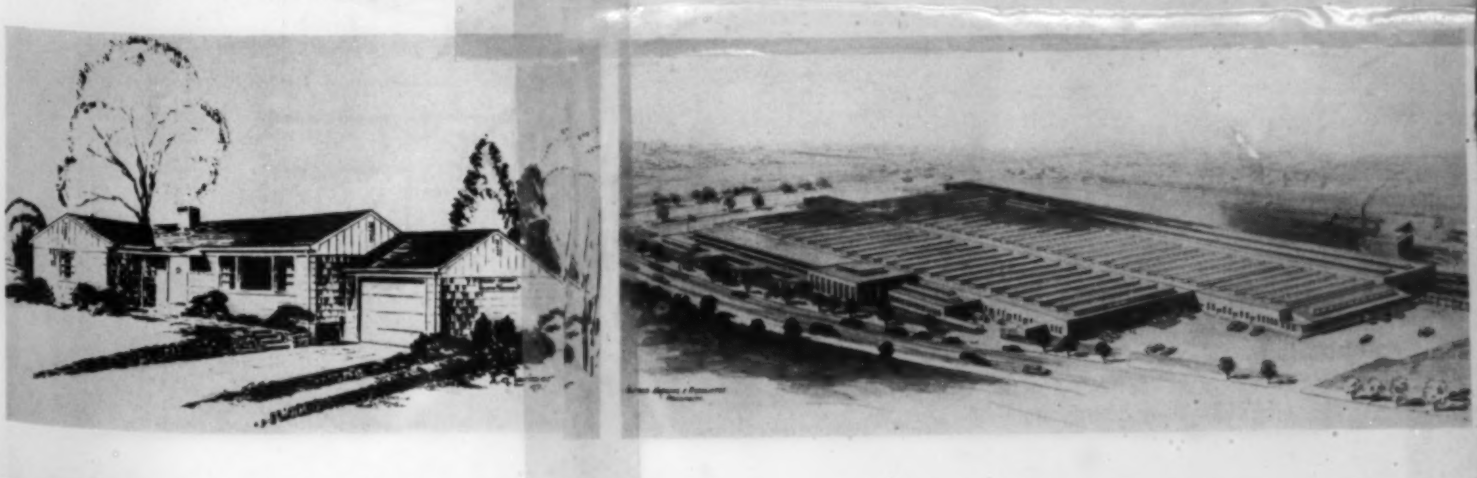
Advantages to the Builder. Coordinated assembly details can be clearer, more accurate. Field erection cost is cut by the reduction of cutting and fitting.

Advantages to the Manufacturer. Standardizing dimensions eliminates many odd sizes, lowering inventories and simplifying manufacturing processes.

Advantages to the Materials Dealers. Smaller inventories, speedier service.

All these add up to better buildings at a lower cost for the owner.

Modular coordination works just as well for either small or large buildings. On the left is one of the Industry Engineered Houses, in which 25 per cent savings in man-hours over usual methods were reported through use of modular design and other engineering principles. At right is the Postal Concentration Center at Long Island City, designed in 29 days and erected in 72 days



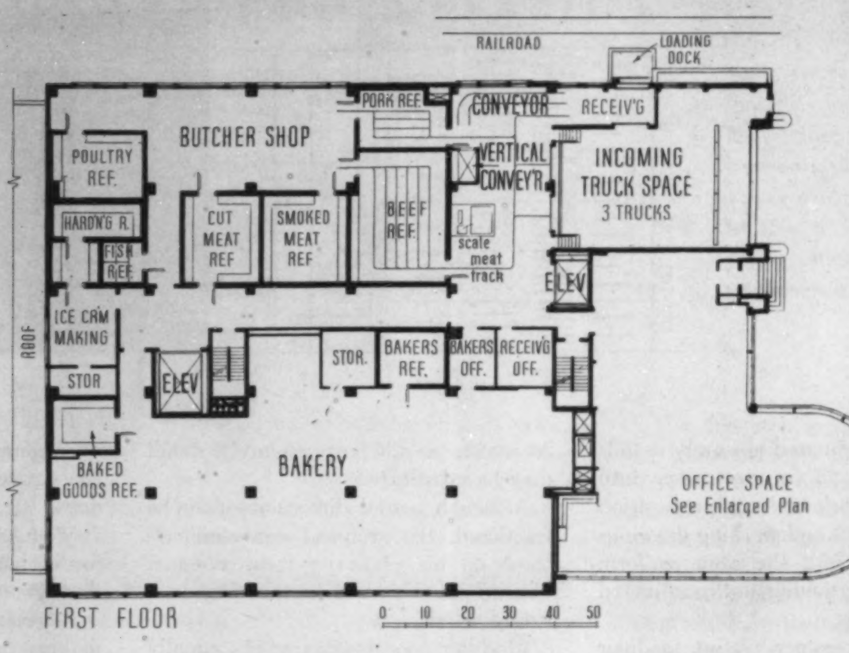
RECEIVING
FOOD PROCESSING
STORAGE

Bakery makes daily
2,000 loaves of bread
1,000 dozen rolls
8,000 servings of pastry

Meat refrigerators hold

15,000 lb	pork
40,000	beef
15,000	smoked meat
15,000	poultry
2,000	fish
12,000	cut meat

Ice cream unit makes yearly
80,000 gallons


RAILROAD
LOADING DOCK
PORK REF.
CONVEYOR
RECEIV'G
BUTCHER SHOP
POULTRY REF.
VERTICAL CONVEY'R
INCOMING TRUCK SPACE
3 TRUCKS
HARD'N'G R.
FISH REF.
CUT MEAT REF
SMOKED MEAT REF
BEEF REF.
scale meat track
ELEV
ICE CRM MAKING
ROOF
STOR
ELEV
STOR.
BAKERS REF.
BAKERS OFF.
RECEIV'G OFF.
BAKED GOODS REF.
BAKERY
OFFICE SPACE
See Enlarged Plan
0 10 20 30 40 50

FIRST FLOOR

FOOD CENTER SERVES COLLEGE KITCHENS

Food Service Building, University of Michigan, Ann Arbor

Concentrated in the Food Service Building at the University of Michigan are sufficient food storage facilities, a bakery and butcher shop to provide 30,000 meals daily.

Approximately $1,500,000 worth of food will be distributed annually to the kitchens of the residence halls, 1000-bed University Hospital, social activity buildings, health service, University elementary and high schools.

Operation of this food center will effect savings in three main ways:

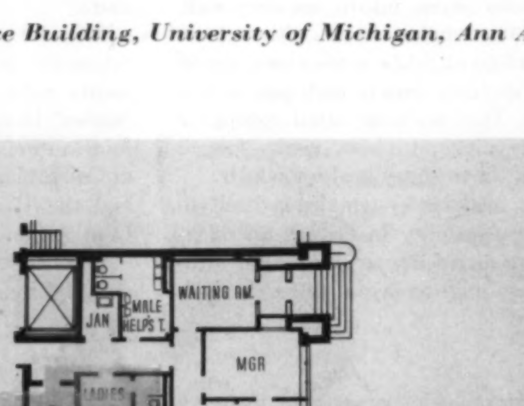
(1) adequate storage facilities permit buying in large lots directly from the manufacturer or the produce market;

(2) consolidation of activities of food preparation personnel economizes on manpower — the centralized meat plant eliminates the necessity for meat cutters at each of the kitchens;

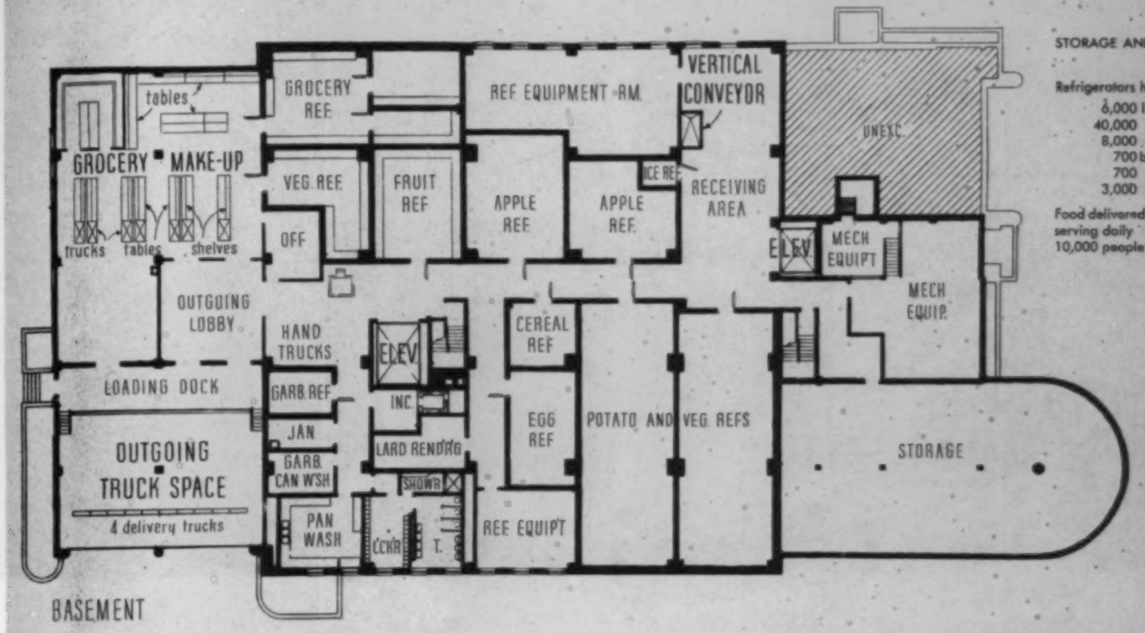
(3) baked goods and ice cream made here replace outside buying of finished products at higher prices.

First Floor

This particular floor houses much of


WAITING RM.
JAN
MALE HELPS T.
MGR
LADIES
FILE RM
JAN
SEC.
SAMPLE RM.
TS
M.
PURCHASING AGENT
ASST MGR
GENERAL OFFICE
VAULT
CONF. RM.
LADIES REST R.
ASST DIET'N
DIETITIAN
BUS'NSS MACH'NE
0 25

OFFICE AREA - FIRST FLOOR
ENLARGED PLAN


GROCERY REF
REF EQUIPMENT RM
VERTICAL CONVEYOR
UNEXC.
tables
GROCERY MAKE-UP
trucks
tables
shelves
VEG. REF
FRUIT REF
APPLE REF
APPLE REF
ICE REF
RECEIVING AREA
OFF
ELEV
MECH EQUIPT
MECH EQUIP
OUTGOING LOBBY
HAND TRUCKS
ELEV
CEREAL REF
LOADING DOCK
GARB REF
INC
EGG REF
POTATO AND VEG. REFS
STORAGE
JAN
LARD RENDRG
OUTGOING TRUCK SPACE
GARB CAN WSH
SHOWR
4 delivery trucks
PAN WASH
LCKR
T.
REF EQUIPT
BASEMENT

STORAGE AND DISPENSING

Refrigerators hold

6,000	lb	cheese
40,000		cereals
8,000		potatoes
700	bu	fresh fruit
700		fresh vegetables
3,000		apples

Food delivered to University kitchens, serving daily
10,000 people = 30,000 meals

Louis C. Kingscott & Associates, Architects

Lynn W. Fry, Supervising Architect, University of Michigan

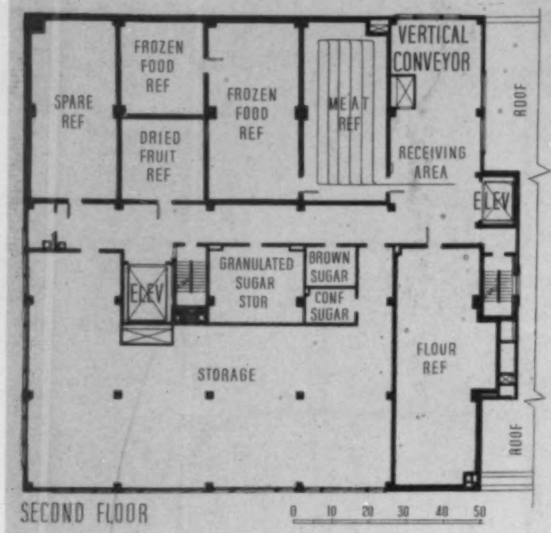
J. E. Stephens Associates, Consulting Engineers

the activity of the building, as it contains the administrative offices, the receiving department, bakery, meat department and ice cream room. (See plans facing page.)

Receiving Department. With the one exception of fresh fruits and vegetables, which are unloaded at the shipping dock for convenience in storing them nearby, all incoming merchandise is delivered to the receiving dock. Merchandise is carefully checked in and weighed, when necessary. There is a platform scale for miscellaneous use as well as an overhead scale for weighing meat. The enclosed loading area is large enough to accommodate three tractor-trailers simultaneously. An electrically-operated overhead door can be closed during inclement weather and periods when the building is not in operation.

From a freight car siding, merchandise is unloaded directly into the building with a portable conveyor. A belt conveyor leading from both the trucking entrance and freight car dock brings in merchandise so that it can be distributed

Food stored and processed here is distributed to all kitchens of the University. Merchandise arrives by truck and rail at a receiving dock on the first floor. (Truck entrance can be seen at right; railroad siding is adjacent.) Conveyors take the food from the dock to its storage place on one of the three floors. Orders leave from the shipping dock located in the basement



STORAGE

Refrigerators hold
3 carloads flour
30 tons sugar
75,000 lb meat
40,000 dried fruit
75,000 frozen food

Second (top) floor is devoted to storage. Flour travels from refrigerator through chutes to bakery machinery below

After being unloaded at receiving areas, meat is placed on hooks and moved on tracks directly into refrigerators

to all three floors. The movement of this conveyor is reversible.

Overhead tracks also lead into the building from the receiving dock and freight car entrance. Meat is placed on hooks at the time of unloading, and moved on these tracks directly into refrigerators near the receiving area.

As merchandise is unloaded, it is stacked, when feasible, directly on pallets which can be picked up, transported, and set down with small hydraulic trucks in any location in the building. Three of these hydraulic trucks save considerable rehandling of such items as cases of canned goods, sugar, potatoes and flour. Two heavy duty freight elevators, one at each end of the building, facilitate the movement of merchandise between the three floors.

Administrative Offices. These offices are occupied by the general manager and his secretary, the business manager, the representative of the University Purchasing Department, the general office staff, and the chief dietitian of the residence halls and her assistant.

Adjacent to the administrative offices is a completely-equipped experimental kitchen where new recipes are tried, and food samples are tested.

Tube and Intercommunication Systems. The building is equipped with a pneumatic tube system with a central station in the main office. There is also an intercommunication system that includes twelve different stations.

Bakery. This unit has an area of about 9000 sq ft and contains two refrigerated store rooms for supplies and for retaining dough temporarily. It is equipped with the latest equipment and is designed on a production line basis so that the dough is prepared and mixed at one end, and the products come out of the ovens at the opposite end.

Meat Department. Directly across the corridor from the bakery is the meat department. It covers an area of about 4000 sq ft and includes a well-equipped modern butcher shop surrounded on three sides by six refrigerators, occupying more than half the area.

Ice Cream Room. A small area at the end of the corridor between the meat department and bakery provides space for the ice cream room. This unit of about 600 sq ft includes a storage space for ice cream of various flavors, the main room in which the freezer is located, and two refrigerated rooms. One of these stores ice cream mix, and the other is a hardening room which is maintained at a temperature of –8 to –10 F.

Basement Floor

This floor has storage facilitates for both staples and fresh fruits and vegetables. It also contains two compressor rooms, the mechanical equipment room and the shipping department. There are, in all, 12 refrigerated rooms on this floor, occupying nearly one-third of its entire space. A large basement room of approximately 2500 sq ft is devoted entirely to the storage of canned goods. Several of the refrigerators are used for butter, cheese, oleomargarine and other more perishable foods.

The shipping department contains space for preparation of orders, an area for completed orders awaiting delivery, and a shipping dock which will accommodate four trucks at a time. The entire area is enclosed, and two electrically operated doors can be closed during inclement weather and non-operating periods. This enclosure serves as a garage for the four delivery trucks.

After an order is prepared and checked, the merchandise is placed in a suitable container, on a small platform truck, or on a pallet, next to the shipping dock where it is picked up by one of the delivery trucks.

The platform trucks can be wheeled directly into the delivery truck and taken to the ordering unit. After the platform truck has been emptied it is returned to Food Service by a later delivery truck.

Merchandise placed on pallets is carried by a hydraulic truck into the delivery truck. The same hydraulic truck is used to set the loaded pallet on the receiving dock of the unit which ordered the merchandise.

Top Floor

The top, or second, floor is entirely storage. The largest area, about 4500 sq ft, provides space for many of the canned fruits and vegetables. Immediately adjacent are three smaller rooms for

The butcher shop, located in the center of six refrigerators which open into it, processes meat ready for cooking

Large rooms in the basement and second floor, totaling 7000 sq ft, were designed for storage of canned goods

sugar. There is also a large refrigerator for frozen foods covering an area of 1125 sq ft.

Another refrigerator of equal size, presently being used for canned goods, is designed for the storage of meat suspended from overhead tracks. Two other areas being used for canned goods and cereals, each equal in size to the frozen foods refrigerator, eventually will be converted to refrigerators.

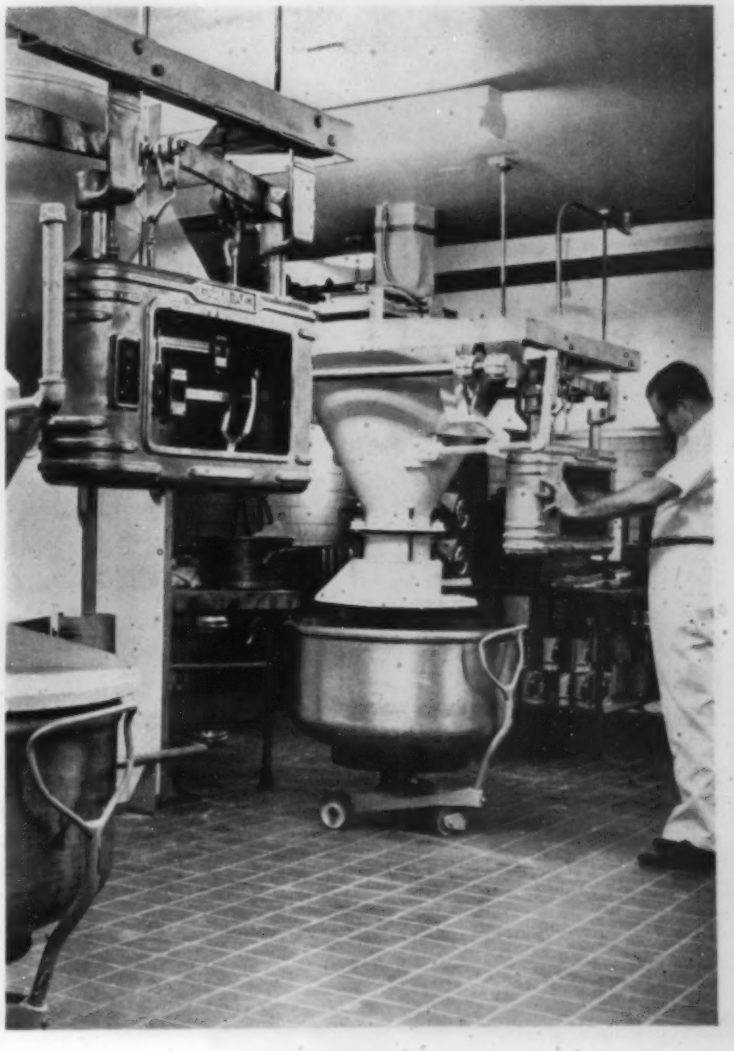
The flour room is also on the top floor. It covers an area of 1320 sq ft and is refrigerated so that an even temperature may be maintained at all times. It also contains flour handling equipment into which as many as one hundred sixty sacks of flour may be dumped at one time for sifting, blending, and aerating. As the flour is required, it is released through chutes to the bakery on the floor directly below. Large scales at the base of these chutes make it possible to weigh the flour to suit the recipes.

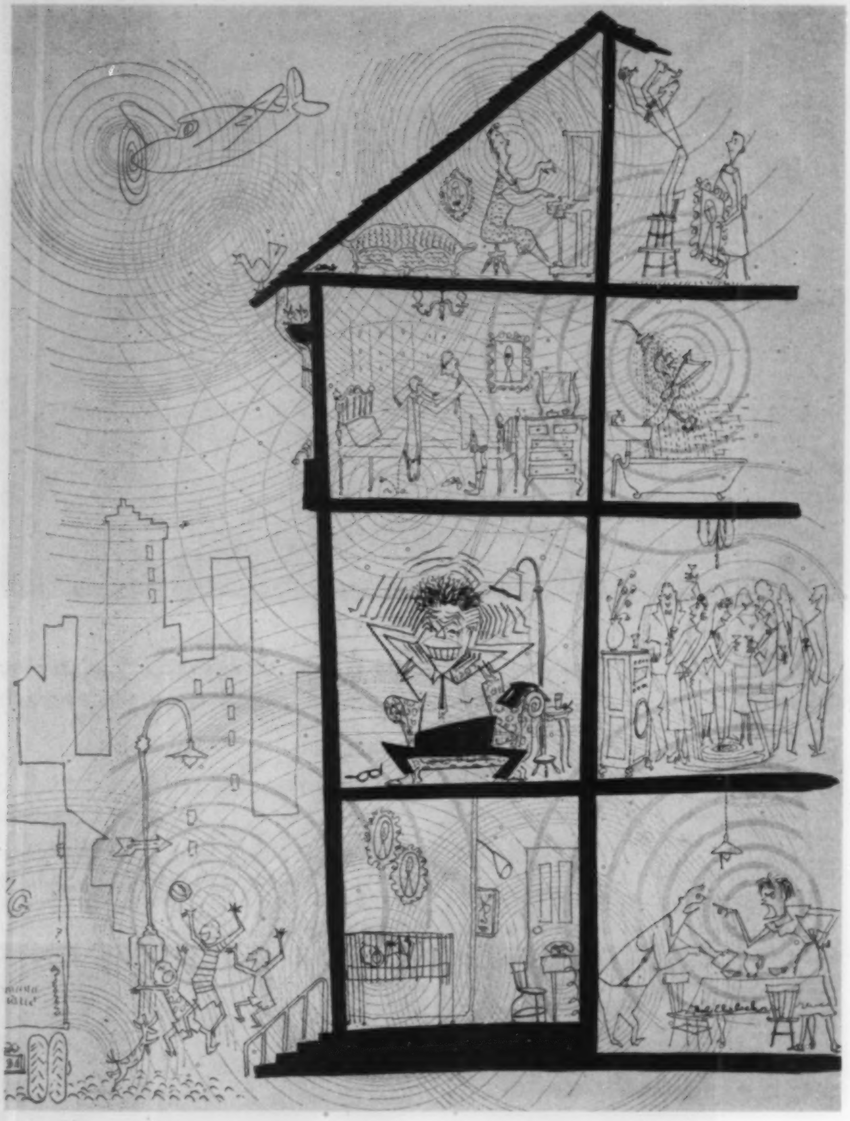
Construction

The building is of reinforced concrete construction with brick and stone exterior. Interior partitions are glazed building tile. In all the food storage areas, the floors are quarry tile laid in acidproof cement. The floor covering in the office section of the building is asphalt tile.

Heating is from the University's central heating plant. Small areas of the building are heated by convector radiators and large areas by unit heaters.

Flour is weighed in hoppers before being emptied into mixing bowls. Water passes through meter and into same tank





Sketch by Sol Ehrlich from Physics Today

ARCHITECTURAL ACOUSTICS

Article 2: Noise Control in Buildings

By Richard H. Bolt and Robert B. Newman

Effects of noise on people

Noise control is meaningful only in its relation to people. Sound, together with heat and light, is one of the basic physical phenomena that determines the environment in which we live.

As we study the influences of these environmental factors, we are reminded many times that a human being has remarkable properties of adaptation. He can, if he wants to, explore the arctic at 50 degrees below zero, or change a tire in the desert at 130 degrees in the sun. He can glean knowledge from a book by candlelight, or follow a pitcher's curve ball illuminated with a million candle power. He can detect the rustling of blades of grass at a few decibels (db) of sound intensity level, or summon maximum concentration amidst a battlefield roar of 120 db — a million-million times as intense.

The question, then, is not how much noise, or other stimulation, can we *stand*, but rather how much should we be expected to tolerate or find normally acceptable under a particular circumstance. Given adequate motivation, we can tolerate almost anything, within very wide limits. But beyond some reasonable limit we must exert excessive compensatory effort which will take its toll. It is not possible yet to make a precise statement of tolerance limits and effects of excessive noise; but extensive efforts of medical scientists, psychologists and physiologists have laid a solid groundwork of essential principles.

Briefly, the effects of noise on people can be divided into three general classes: (a) physiological effects, (b) damage, and (c) psychological effects. Even these three are not completely independent of each other.

In the range above 70 or 80 db the body responds to noise by a number of measurable physiological influences on pulse rate, breathing, stomach contractions and other processes. These effects in turn may give rise to fatigue, digestive difficulties or other evidences of an unhealthy environment.

As we increase the noise levels above about 130 db, damage to our hearing mechanism occurs. At first this damage may be only temporary, but prolonged high levels bring on permanent deafness.

Psychological influences may occur at any level of sound. Annoyance and discomfort can arise from excessive stimulation of the nervous system by loud or startling noises: a siren breaking the still of night, a banging door or the intermittent blow of a steam pile driver. Noises that take us by surprise or that are out of the ordinary are usually disturbing. We expect heavy truck noises in a business district, but not on a quiet residential street. Music may be pleasant in the cafeteria, but it will be unwelcome in the executive's office during a conference.

One of the commonest psychological influences of noise is the intrusion of privacy that is associated with hearing sounds from other people. This can work in reverse also: if we are living in fear that our normal sounds are being heard by others and perhaps bothering them, we are inhibited against living in a normal way. Even faint sounds coming through the wall from a neighbor's apartment may be embarrassing or annoying. As long as the sounds can be heard in such a way that they convey undesired information, they constitute a potential annoyance.

In the case of speech it may be necessary only to reduce the loudness to that point at which we can no longer understand what is being said. Then, at least, we do not overhear information not intended for us. In other cases, such as plumbing noise, screams from children, or even walking noises, it may be necessary to reduce the noise almost to inaudibility before it ceases to inform us of its origin or associations.

Another annoying situation is the inability to carry on normal conversation because of excessive interfering noise. Often we can regain some degree of communication by speaking very close to the ear and by raising our voice or shouting. But after a time this effort wears us down.

Thus we see that noises are potentially annoying if they convey undesired information, if they interfere with normal conversation or if they are unexpected or startling. Usually the likelihood of annoyance increases as the sound level (or loudness, which is related but is not the same quantity) is increased.

In addition to the magnitude of the sound, its frequency characteristics (related to tone quality) and its dynamic manner of varying with time may influence the degree of disturbance. Obviously, then, we must consider some of these characteristics of noises encountered in buildings before we can design rationally for noise control.

Characteristics of noise sources

A noise may be described in many ways. We can, for example, compare it with some other noise. "That ventilating system sounds like Niagara Falls" (actual quotation!) would convey a vivid, though perhaps not completely accurate, picture of the noise condition. Sounds may be described as high pitched or low pitched, as jarring or soothing; but such descriptions give only a qualitative and disputable evaluation. In order to describe a noise precisely we must use numbers and rigorously defined physical quantities.

The most useful single quantity is the (total) sound level, in decibels, as read on a sound level meter in accordance with standardized procedures. This number gives a measure of the total sound intensity over the whole range of frequencies of importance to the ear. Before discussing further refinements that are sometimes needed, let us look at some commonly encountered values of sound levels.

Fig. 1 shows the average sound levels from several typical sources of noise under a variety of conditions. Each item spans a range of decibel values as indicated by the elongated arrows. Unlike a man's body temperature which is almost always just 98.6 F, the sound he generates in talking, singing or shouting varies over wide limits. Noise from traffic depends on the speed and type of vehicle and on the surface of the road; noise from machinery varies with power, speed, type of mechanism, mounting, and even the state of repair.

In fact, most noise sources we encounter must be viewed statistically — we must deal with average sound levels covering a range which represents the usual variation among individual sources of a given class. Furthermore, the sound level at any particular point in space depends strongly on the distance from the source, and on the properties of the room if the source is inside.

The variants are included in an approximate fashion in Fig. 1. Some noises commonly experienced in enclosures are bracketed in the upper group. The given range of sound level would be experienced, on the average, throughout the enclosure except very near a specific noise source. Each listing implies a "usual" situation. This would exclude, for example, inside the automobile when not in motion, or in a normally quiet residence when the vacuum cleaner is used.

The middle group in Fig. 1 gives noise levels at a distance of 3 ft from some sources that are more or less localized. In general, the sound level would diminish about 6 db each time the distance is doubled if the source is out of doors or in a very large space. The lower group describes some common exterior noises. Notice the very wide spread from a quiet residential street (where passenger cars pass occasionally) to a noisy street (which is busy with heavy commercial vehicles). The latter situation is noisier both because the individual sources are noisier and because there is a greater density of them.

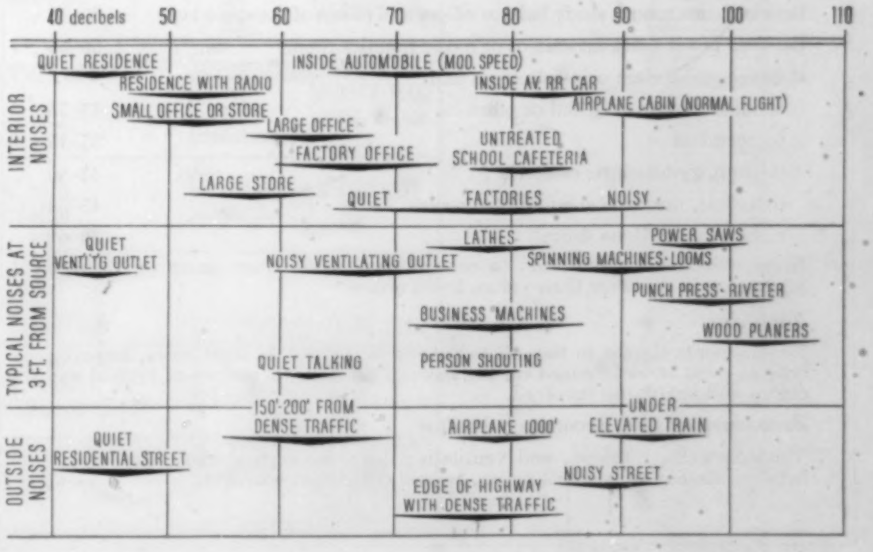
The average traffic condition at a site has considerable influence on the requirements for exterior noise isolation in a building. A theater on a busy commercial street may need 20 or 30 db more noise insulation than one in a park.

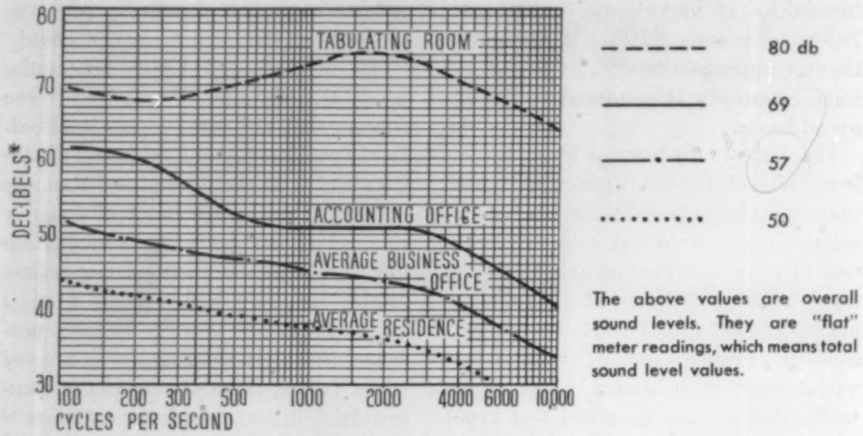
Another designating characteristic of a noise is its frequency spectrum. Noises usually contain many frequency components, or a continuous spread of sound energy over a wide range of frequency.

Average spectra of room noises are quite similar in most cases, for the sources are usually people walking, talking and working. The three lower curves in Fig. 2 are typical of most rooms. The general shape of these curves is also similar to that for many outdoor background noise conditions.

It is because of this general similarity that we can simplify many acoustic

Fig. 1. Average sound levels for typical noises. *These values give a measure of the sound intensity over the frequency range important to the ear. Noises from these sources naturally can't be pinned down to specific values; so the tapered lines indicate the range over which they may vary. Sound level, however, is not the only criterion for noise control*





The above values are overall sound levels. They are "flat" meter readings, which means total sound level values.

In order to plot the graph, sound level readings were taken for a series of octave frequency bands.

Fig. 2. *The frequency characteristic (pitch) of a noise may be just as important as, and sometimes more than, the intensity. The tabulating room curve shows quite a bit of noise around 1000 cps and above, which is usually more annoying than lower frequencies*

NORMAL REQUIREMENTS FOR NOISE REDUCTION

Situation	**Range of average NR (db)**
Dwellings (apartments, hotels, row houses, single dwellings, etc.)	
Through party walls between living room of one dwelling and living room or bedroom of adjacent dwelling	45–55
Through party walls and floors between all other combinations of spaces	40–50
Between rooms within dwelling if privacy is expected between these rooms	30–45
Offices	
To protect private office or conference room from:	
a. rooms of same type	35–45
b. general clerical offices	30–40
c. business machines, accounting offices	35–50
d. noisy factory spaces, depending on types of machinery	40–60
e. outdoors, depending widely on nature of traffic	25–55
Noise reduction requirements to protect general clerical offices from spaces (b), (c), (d), and (e) can be 5 to 10 db lower than those values listed above.	
Schools and Churches	
Between class rooms, study halls or offices and rooms of the same type	35–45
Between music teaching studios or music practice rooms	50–65
Between auditorium or music room and:	
a. class room, study hall or office	45–55
b. corridors	35–45
c. shop, gymnasium, cafeteria	45–60
d. toilets, mechanical equipment rooms	45–55
e. band room (bass drum!)	50–65
Noise reduction requirements to protect class rooms from spaces (a) through (e) can be 10 db lower than values listed above	
Factories	
Requirements similar to those listed above for offices. In most cases, however, criteria must be determined on the basis of an acoustic survey of typical machines and operations involved.	
Broadcasting and Recording Studios	
Through walls, windows, and ventilating ducts between studios; also between studios and control rooms, general circulation spaces	55–65

specifications to a single number: the overall sound level of an interfering noise, the average criterion for acceptable background, or the average transmission loss of a wall.

There are important exceptions, however. The tabulating room curve in Fig. 2, for example, shows an "unusual" amount of noise around 1000 cps and above. This upper frequency range is usually more annoying; or perhaps the annoyance arises from the unusual shape of the curve. The spectrum does not taper off.

In other cases, the low frequency may be accentuated, as in the heavy rumble of an unmuffled truck. Again, the noise may obtrude because it has a sharp spike in its spectrum, a whistle or whine at a particular frequency.

Whenever an unusual noise situation is anticipated, the architect should obtain special information or advice. Many such cases are discussed in the literature (see bibliography in Article 1, April, 1950). But sometimes it is necessary to measure the noise directly in order to obtain sufficient information for noise control engineering. In the remainder of this article we shall deal mainly with the average noise conditions that can be treated adequately in terms of single numbers.

Criteria for noise control

The preceding sections on subjective effects and physical characteristics of noise describe, in a general way, the underlying information we need to establish criteria for noise control.

One way to specify criteria is in terms of recommended average background levels in rooms to meet particular functional requirements. A table of such criteria was given in the previous article.

The level in a legitimate theater, for example, should not exceed 30–35 db if the actors' voices are to be received intelligibly throughout the audience without undue masking by extraneous noise. In a public office, a range of 45–55 db is satisfactory to all normal conversation and business activity without excessive noise annoyance. It is more difficult to give such criteria for dwellings, where some of the noises intrude on privacy if they are heard at all.

Another type of criterion, more directly applicable to all kinds of architectural problems, is the required *noise reduction* (NR), in decibels, between two spaces. The NR is simply the difference between the (average overall unless otherwise specified) sound levels in the two spaces. In most cases the NR between adjacent spaces is about equal (within 5 db) to the effective transmission loss of the intervening structure.

Methods of calculating and designing for noise reduction are discussed later; first we present some NR criteria values.

The table across page lists requirements for NR in several common cases. Again it should be emphasized that these simple numbers apply only when the spaces contain the kinds of noises usually associated with them. The NR criteria are obtained in general by subtracting background noise criteria values from average sound levels of the source noises involved.

To see roughly what type of construction is involved in achieving these values of NR, refer to the transmission loss (TL) values listed for typical constructions in Fig. 3.

Take for example a school auditorium which is to be protected from a cafeteria. The auditorium background criterion is 35–40 db (previous article); and Fig. 1 shows a range of 75 to 85 db average sound level in a cafeteria.

Good acoustic design should provide protection against the worst conditions normally anticipated. At least, a compromise from optimum noise control should be accepted only if it is unavoidable; for example when optimum control cannot be attained by any means within the budget.

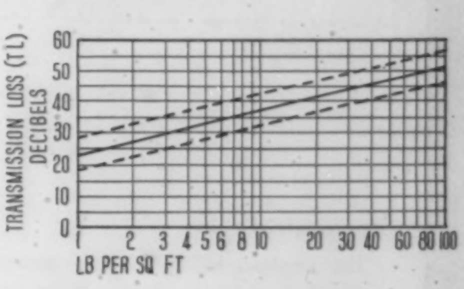
In any case, let us assume the extreme of 85 db in the cafeteria and call for 35 db in the auditorium. The difference is 50 db NR, which falls in the range 45–60 db specified in the table. This upper limit of 60 db NR would probably be needed for protection against shops with noisy power tools.

This table simplifies a large body of inter-related information obtained from practical experience. Though very useful, this material should be used only with caution and analysis of each problem.

In some cases, because of the unusual character of the intruding noise, or because of the meaning conveyed by it, the requirement for NR will be greater than that required simply to reduce the noise

(*Continued on page 252*)

AVERAGE TRANSMISSION LOSS OF SOLID PARTITIONS (AVERAGE OF VALUES AT 125, 250, 500, 1000, AND 2000 CPS)



WEIGHT OF COMMON BUILDING MATERIALS,

lb per sq ft per in. of thickness.

Cinder Concrete	8	Aluminum	14
Dense Concrete	12	Steel	40
Brick	10–12	Lead	65

Fig. 5 *(below). A decibel calculation chart. With values x or 1/x known, noise reduction (NR) and transmission loss (TL) can be determined immediately. See text later in article for use of this chart*

x	10 log x	$\frac{1}{x}$
	TL	τ
	Eff. TL	$\frac{\text{sum } \tau S}{\text{sum } S}$
$I_1/{}_2I$	NR	$I_2/{}_1I$
a_2/a_1	NR	a_1/a_2
	NR	$\frac{\text{sum } \tau S}{a_2}$

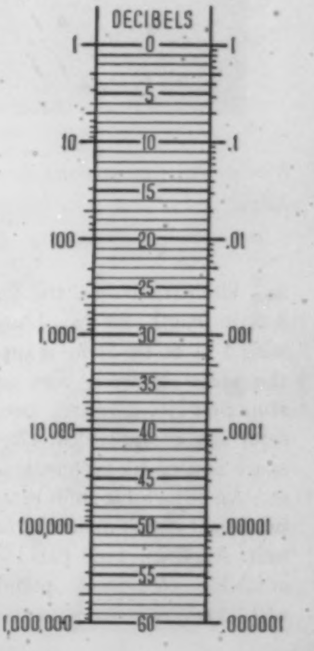
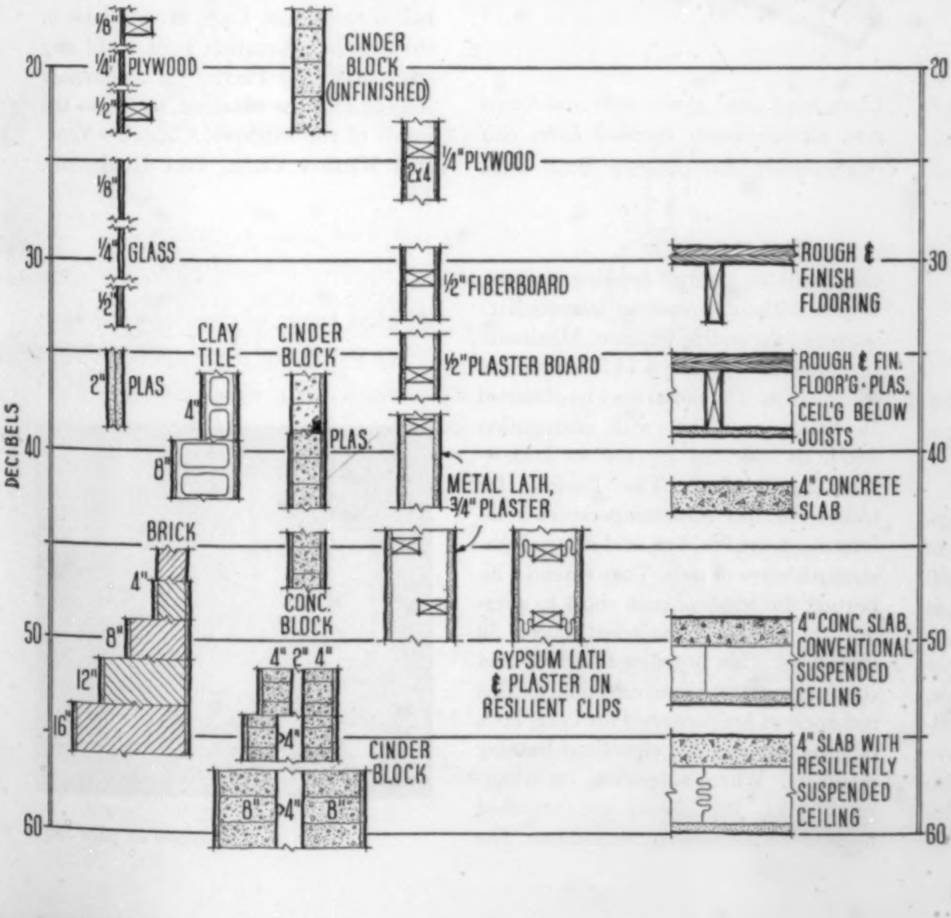


Fig. 3 *(below). In this chart the average transmission loss, TL, for a certain construction can be found by reading across to the decibel scale. The range over which the transmission losses may vary in practice is indicated by the length of the detail. Thus, details are not drawn to the same scale.* **Fig. 4** *(top of page). How TL of solid partitions varies with weight. Solid line is the mean; dashed lines indicate max. and min. limits*

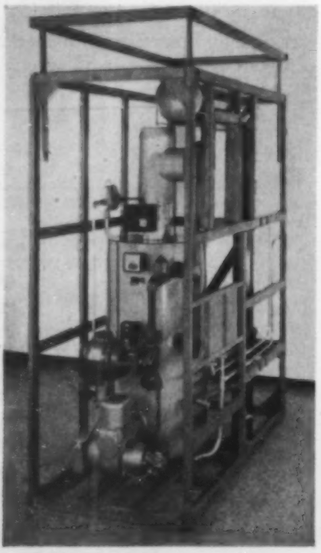
AVERAGE TRANSMISSION LOSS FOR TYPICAL WALL AND FLOOR CONSTRUCTIONS


DECIBELS
20
30
40
50
60
20
30
40
50
60
1/8"
1/4" PLYWOOD
1/2"
CINDER BLOCK (UNFINISHED)
1/4" PLYWOOD
2x4
1/8"
1/4" GLASS
1/2"
1/2" FIBERBOARD
ROUGH & FINISH FLOORING
CLAY TILE
CINDER BLOCK
2" PLAS
4"
8"
PLAS.
1/2" PLASTER BOARD
ROUGH & FIN. FLOOR'G - PLAS. CEIL'G BELOW JOISTS
METAL LATH, 3/4" PLASTER
4" CONCRETE SLAB
BRICK
4"
8"
12"
16"
CONC. BLOCK
GYPSUM LATH & PLASTER ON RESILIENT CLIPS
4" CONC. SLAB, CONVENTIONAL SUSPENDED CEILING
4" 2" 4"
4"
CINDER BLOCK
8"
4"
8"
4" SLAB WITH RESILIENTLY SUSPENDED CEILING

PRODUCTS for Better Building

Mechanical Core

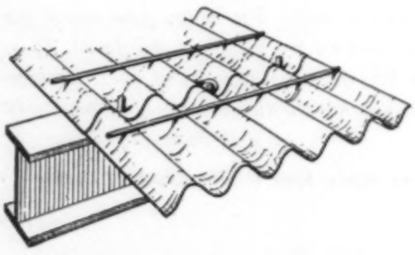
The *Lankton Utility Unit*, a central mechanical core, is designed for installation between kitchen and bathroom in small houses. The core includes a gas- or oil-fired forced warm air furnace or a boiler; a gas or electric water heater; and plumbing assembly complete with drains, vents, and copper water pipes serving all kitchen and bath fixtures. The unit is 30 in. wide, 66 in. long and 77 in. high, will pass through an ordinary sized door. The frame is made of 1 by 2 in. welded steel channels, with filler strips for nailing wall covering in bath and kitchen. Installed with bath and kitchen fixtures, the unit requires 8 ft in length: on No. 1 unit, a single wing 1 by 66 by 31 in. is supplied to fill the space between core and outside studs; on No. 2 model, two wings the same size are provided. Excess interior space is used for meters, sillcock, tools, etc. An adjustable soffit extends to ceiling height and eliminates framing above unit. An 8 in. wide panel core is also available containing plumbing only, with separate heating elements for installation in basement or utility room. The unit may be purchased as core only; with either bath or kitchen fixtures; or as a complete unit. Lankton Industries, Inc., Peoria, Ill.



Mechanical core contains furnace, water heater and plumbing for kitchen and bath

Combined Form and Reinforcement For Concrete

Cofar, combination form and reinforcement for concrete floor and ceiling slabs, employs corrugated galvanized steel sheets with welded cross (T) wires to replace conventional reinforcing bars and forms. The sheets come ready, welded and cut to length for placing between permanent beams or walls. They are claimed to withstand construction loads at normal bending stresses, with or without temporary intermediate supports, depending on span. Maximum sheet length available is 14 ft; maximum width, 32 in. The metal may be obtained 16 to 26 ga thick, with corrugation depth as specified for use as form — $1\frac{1}{16}$ in. or more. The T-wires, for transverse ties and temperature reinforcement, are No. 4 ga cold-drawn high-strength wires or rods. They extend 6 in. beyond the edges of each sheet to overlap the wires of adjacent sheet 30 diameters. This provides interlock and continuity in transverse direction. Welded rod anchors are furnished for tying ends of sheets to concrete structural framing members. When supported on structural steel, the sheets are attached by stud- or arc-welded connections. The galvanized surface furnishes light and heat reflective ceilings for many occupancies. Ceiling lath or hangers are said to be easily attached. Granite City Steel Co., Granite City, Ill.



Corrugated steel sheets with welded-on bars provide easily installed forms and reinforcement for concrete floor slabs

Louver Windows

Designed for use as windows, door panels, glass walls, and porch or breezeway enclosures, the *Clearview Venetian Windows* employ adjustable, overlapping plate glass or aluminum louvers set in sealed aluminum frames. The units are weatherstripped, and are claimed to provide positive protection from wind and rain, as well as light and ventilation control. The louvers are available in clear, tinted or obscure glass with ground edges, or in painted aluminum. All are interchangeable in whole or part, to provide full vision, semi-privacy or complete privacy as required. Louvers are adjusted to any position by a turn of a chrome-plated handle located on the inside frame. The frame and all aluminum parts are produced in clear lacquer finish, and in 10 standard colors of baked-on enamel. Units are available in stock sizes, or custom built to fit any size opening. Plastic or aluminum screens may be obtained to fit on the inside of the windows. Clearview Venetian Window Corp., Fort Lauderdale, Fla.

All-glass louver windows give full ventilation control and vision, rain protection

(*Continued on page 260*)

ELECTRICAL CONDUITS: 1—Use and Installation

This article is condensed from Aspects of Electrical Conduit Installations in Houses by Jefferson D. Brooks, Technical Bulletin No. 12, Jan. 1950, Housing and Home Finance Agency. Minimum requirements are given for safe installation of three commonly used types of steel conduits.

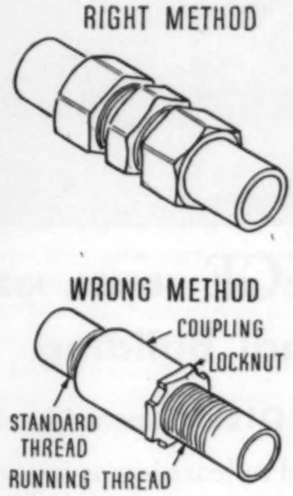
Types and Uses

1. *Rigid conduit* is an older, heavier type, softer than water pipe for easy bending, but sized for same tools. Internal diameter is a bit larger than nominal size. Galvanized or other rust-resistant finish is required if exposed to dampness. Enameled iron conduits may be used only indoors, with no severe corrosive influences. Materials especially suited to such conditions must be used; avoid dissimilar materials. Place conduit at least 18 in. under cinder fill subject to permanent moisture, or encase in 2 in. of non-cinder concrete. In wet locations, system must be water tight; leave at least ¼ in. air space between conduit or boxes and wall.

2. *Thin wall conduit* or *EMT* (electrical metallic tubing) is a lighter type, usually galvanized or similarly finished. It is used for exposed or concealed work where not subject to severe mechanical injury. Use is restricted in hazardous locations. Otherwise it is used as rigid conduit.

3. *Flexible conduit* is strong flexible tubing of spirally wound, interlocked steel strip, usually galvanized. Use in dry locations unless lead-covered or type RW (moisture resistant) wiring is employed. Do not use in hazardous locations. Conduits less than ½ in. size are used only for under-plaster extensions, fixtures, motor leads. Occasionally ⅜ in. size is permitted up to 48 in. (or longer) where larger size is not practicable.

Fig. 1. Conduit connections



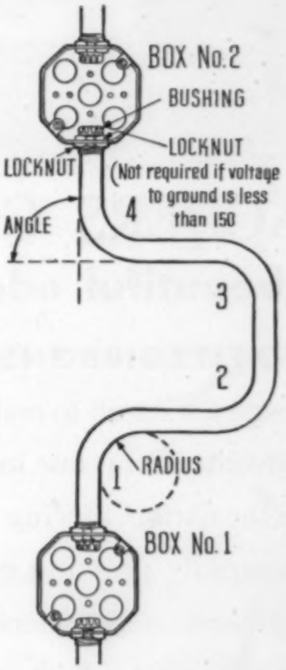
Fittings

1. Running threads must not be used on rigid conduit for connections at couplings; unions must be used. Threads are finer than for standard pipe; threadless connectors are often used. The latter must be watertight if buried in masonry, concrete, fill, or used in wet places

2. Bushings must be used on ends of conduit unless box or fitting affords equal protection. A bushing may replace box where more than 4 conductors leave conduit at control apparatus, if wires are bunched, taped and painted; bushings must be of insulated type, except for lead-covered wires

3. All ends of conduit must be reamed to remove rough edges

Fig. 2. Bends in circuit



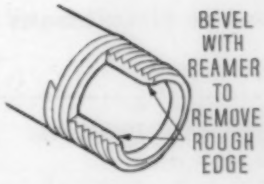


Fig. 3. Reamed end of conduit

TABLE 1 Conduit (trade size) (inches)	Radius of bends in inches	
	Ordinary conductors	Lead-covered conductors
½	3.7	6.2
¾	4.9	8.3
1	6.3	10.5
1¼	8.3	13.8
1½	9.6	16.1
2	12.4	20.6
2½	14.8	24.6
3	18.4	30.6
3½	21.3	35.5
4	24.1	40.2
4½	27.0	45.0
5	30.3	50.4
6	36.4	60.6

Bends *must not injure conduit or effectively reduce internal diameter. Radius of the inner edge of any bend not made by manufacturer must not be less than shown in Table 1. Conduit between 2 outlets, fittings, or combination, must not have more than equivalent of 4 quarter bends (Fig. 2)*

TABLE 2. Max Support Intervals For Conductors in Vertical Conduits

	Feet
No. 0 and smaller	100
No. 00 to No. 000	80
250 to 350 MCM	60
400 to 500 MCM	50
600 to 750 MCM	40
800 MCM and larger	35

Supports: *conductors in vertical conduits must be supported by clamps, wedges or insulators at intervals not greater than shown in Table 2. All conduits must be securely fastened in place. Runs must be continuous from box to box with no splices*

(Continued on page 175)

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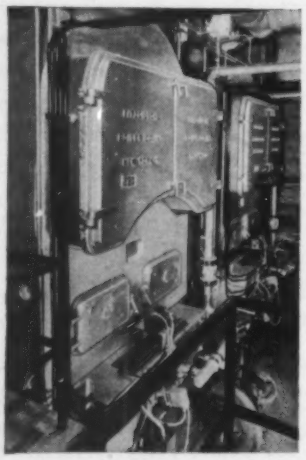

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ELECTRICAL CONDUITS: 2—Installation and Selection

(*Continued from page 173*)

Miscellaneous Requirements

Wires must not be inserted in conduits until rough mechanical work on house is completed. Pull wires are inserted after making up conduit connections. Graphite, talc or approved compound are used as wire lubricant; cleaning agents must not be used.

Conductors of signal or radio systems must not occupy same conduit with those of light or power systems, except for elevators, sound recording and remote control. Conduits must not pass through dust or vapor removal ducts. Rigid conduit, or flexible conduit with lead covered conductors, may pass through air-conditioning ducts only where necessary and must not obstruct fire dampers. Switch enclosures must not be used as junction boxes to make taps or feed through.

Secondary wiring to cold cathode lamps of 1000 volts or less may occupy same conduit as branch circuit conductors. Light and power circuits of 600 volts or less may occupy same conduit, whether a-c or d-c. Circuits over 600 volts must be separated from those under 600 volts. Prevent air circulation from warmer to colder areas through conduit.

Vertical conductors No. 1 or larger require the following gutter widths if deflected where they leave cabinet:

No. 1	3 in.
No. 0 to 200 MCM	4 in.
250 to 900 MCM	6 in.

Where ungrounded conductors of No. 4 or larger are deflected more than 30 deg at ends of conduit run, an insulating bushing is required.

Conductors in Multiple

Where circuit capacity makes it impracticable to run all conductors in one conduit, additional conduits may be used if conductors in any one conduit are balanced in size and include one from each phase. Current in one direction must substantially equal current in opposite direction (fig. 4). With circuits supplying cold cathode tubes, x-ray apparatus, and underplaster extensions, currents are so small that a single conductor may be placed in a conduit without trouble from induction. Conductors in sizes No. 0 to 500 MCM may be run in multiple if they are same length and have same area and type of insulation. Terminate both ends in manner to insure equal division of current. Except by special permission, not more than number of wires shown in Table 3 may be installed in multiple.

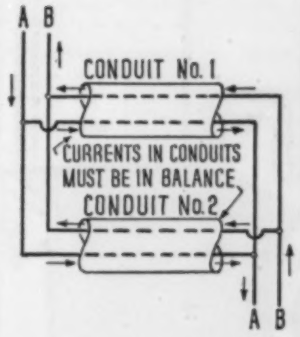


Fig. 4. Conductors in multiple

TABLE 3. Max No. of Wires To Be Installed in Multiple

No. of wires:	Size
3	No. 0
4	No. 00
5	No. 000 to 500 MCM

Wire Carrying Capacity

Standard tabulated carrying capacities of wires are based upon 3 or less wires in a conduit, and a surrounding temperature of not more than 86 F. Capacity must be reduced to 80 per cent of that listed for 4, 5 or 6 wires in a conduit; to 70 per cent for 7, 8 or 9 wires. A neutral conductor used with balanced circuits is not counted in applying percentages. If one of the system wires is missing from circuit (as in a 3-wire circuit from a 4-wire system) the neutral conductor must be counted, for it carries the unbalanced current which would have been carried by the missing wire. All current-carrying capacity must be separately reduced for high surrounding temperatures by percentages given in Table 4. If room temp is within 18 deg of a maximum allowable temp, use insulation with next higher maximum.

TABLE 4. Temp Reduction Factors (percentages)

Max Temp (°F)	Type of insulation			
	R, RW, RU, T, and TW	RH	V and AVB	AVA and AVL
104	82	88	90	94
113	71	82	85	90
122	58	75	80	87
131	41	67	74	83
140	....	58	67	79
158	....	35	52	71
167	....	....	43	66
176	....	....	30	61
194	....	....	....	50

Conduit Size Selection

Due to bunching effect of wires in conduit, all space inside conduit cannot be filled with wire (fig. 5). Percentages of allowable fill are calculated in sq in. of net cross-sectional area for standard size conduits, for various numbers of wires, in Table 5; Section A is for non-lead-covered wires, Section B is for lead-covered.

Where conduits cannot be replaced without damage to house, it is satisfactory to rewire conduits, for increased capacity, with more or larger wires which occupy more space than permitted for original installations. These increased values in sq in. are given in Table 5, Section C.

Cross-sectional areas of the various types of wires, in sq in., are given in Table 6. Values are added together for any combination of wires to be installed in a single conduit. This total permits ready selection of a conduit size, filled to a given percentage, from Table 5. Portion of conduit available for wires must be not less than shown for number and kinds of wires involved.

Where all wires are of one size, non-lead-covered, and for new installations, use Table 7 to select conduit size.

In general, one conduit must not contain more than 9 wires. Table 8 shows conduit capacity for a greater no. of wires, where specially permitted.

(*Continued on page 177*)

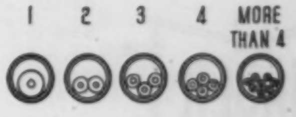
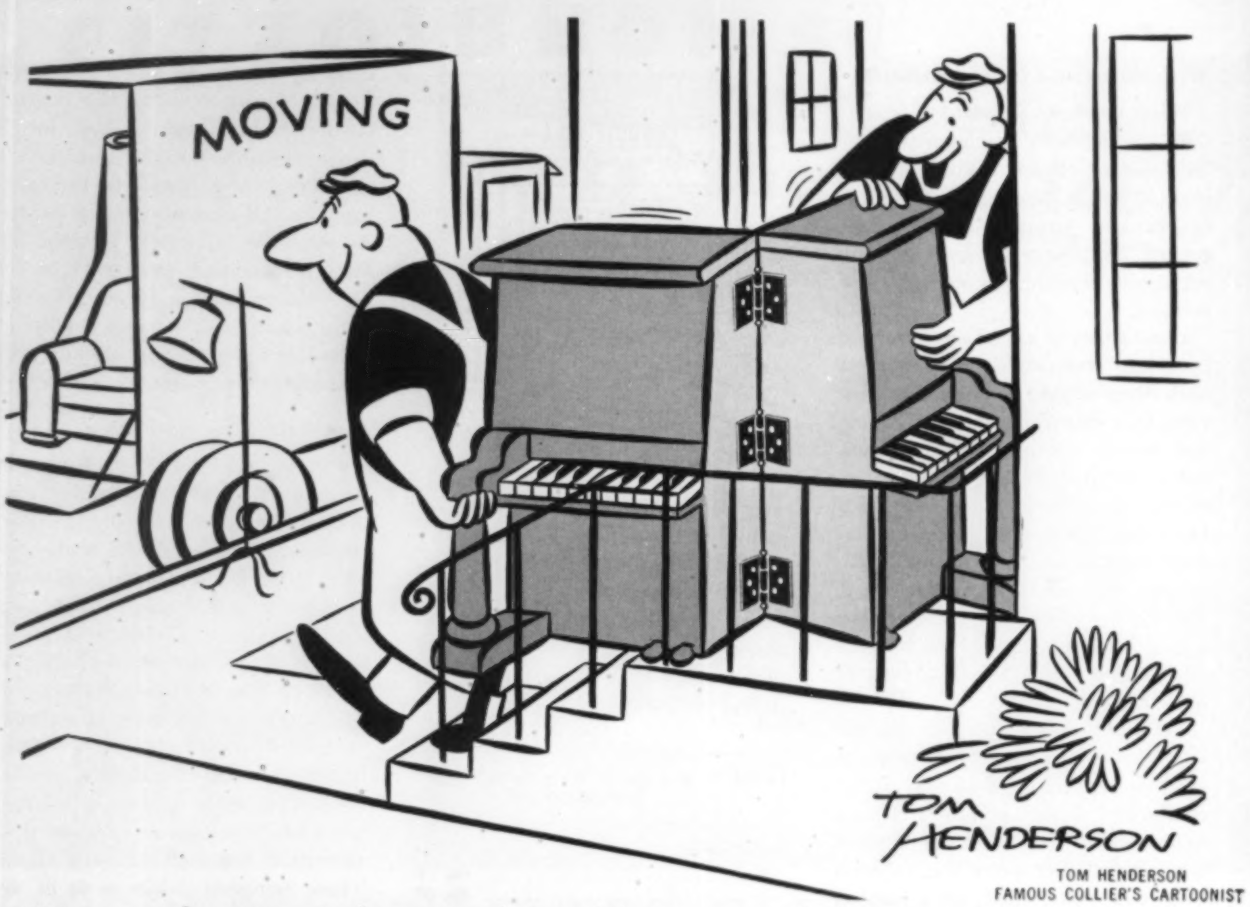


Fig. 5. Cross-sectional area of conduit which conductors may occupy



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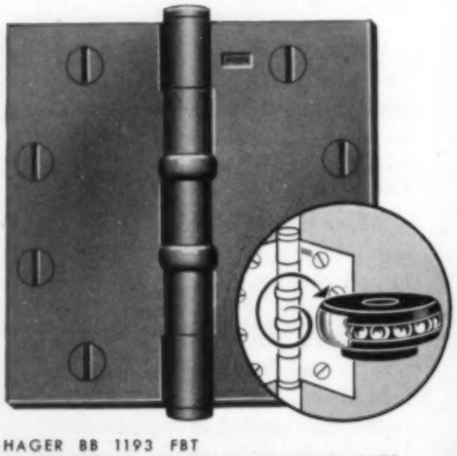

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ELECTRICAL CONDUITS: 3—Size Selection Tables

(Continued from page 175)

TABLE 5.—*Net cross-sectional areas in square inches of conduit and tubing available for wires and cables for general use*

Conduit (trade size) (in.)	Diameter (in.)	Area (sq. in.) (100 percent)	A. Conductors not lead-covered				B. Lead-covered conductors					C. Rewiring		
			1 conductor (53 percent)	2 conductor (31 percent)	3 conductors (43 percent)	Over 3 conductors (40 percent)	1 conductor (55 percent)	2 conductors (30 percent)	3 conductors (40 percent)	4 conductors (38 percent)	Over 4 conductors (35 percent)	1 conductor (60 percent)	2 conductors (40 percent)	Over 2 conductors (50 percent)
½	0.622	0.30	0.16	0.09	0.13	0.12	0.17	0.09	0.12	0.11	0.11	0.18	0.12	0.15
¾	.824	.53	.28	.16	.23	.21	.29	.16	.21	.20	.19	.32	.21	.27
1	1.049	.86	.46	.27	.37	.34	.47	.26	.34	.33	.30	.52	.34	.43
1¼	1.380	1.50	.80	.47	.65	.60	.83	.45	.60	.57	.53	.90	.60	.75
1½	1.610	2.04	1.08	.63	.88	.82	1.12	.61	.82	.78	.71	1.22	.82	1.02
2	2.067	3.36	1.78	1.04	1.44	1.34	1.85	1.01	1.34	1.28	1.18	2.02	1.34	1.68
2½	2.469	4.79	2.54	1.48	2.06	1.92	2.63	1.44	1.92	1.82	1.68	2.87	1.92	2.39
3	3.068	7.38	3.91	2.29	3.17	2.95	4.06	2.21	2.95	2.80	2.58	4.43	2.95	3.69
3½	3.548	9.90	5.25	3.07	4.26	3.96	5.44	2.97	3.96	3.76	3.47	5.94	3.96	4.95
4	4.026	12.72	6.74	3.94	5.47	5.09	7.00	3.82	5.09	4.83	4.45	7.63	5.09	6.36
4½	4.506	15.95	8.45	4.94	6.86	6.38	8.77	4.78	6.38	6.06	5.57	9.57	6.38	7.97
5	5.047	20.00	10.60	6.20	8.60	8.00	11.00	6.00	8.00	7.60	7.00	12.00	8.00	10.00
6	6.065	28.89	15.31	8.96	12.42	11.56	15.89	8.67	11.56	10.98	10.11	17.33	11.55	14.44

TABLE 6.—*Areas of conductors to be used in determining the number of wires of various sizes and combination that may be installed in a conduit*

Wires—approximate area in sq in.

Wire size	RF–32;[1] R;[1] RH;[1] RW[1]	TF;[2] T;[2] TW;[2] RU[2]	Lead-covered RL and RHL—individual cables			AVA	AVB	AVL	Bare
			1 conductor	2 conductors	3 conductors				
18	0.0167	0.0088	...	...	...	...	...	...	0.0013
16	.0196	.0109	...	...	...	...	...	...	.0020
14	.0327	.0135	0.062	0.115	0.273	0.047	0.033	0.080	.0032
12	.0384	.0172	.066	.146	.301	.055	.040	.091	.0051
10	.0460	.0224	.096	.180	.363	.064	.047	.102	.0081
8	.0760	.0408	.132	.255	.528	.075	.057	.119	.0130
6	.1238	.0819	.188	.369	.738	.122	.094	.145	.027
4	.1605	.1087	.237	.457	.916	.155	.123	.181	.042
3	.1817	.1263	...	...	...	...	...	...	.053
2	.2067	.1473	.283	.578	1.146	.200	.166	.255	.067
1	.2715	.2027	.352	.756	1.49	.268	.229	.300	.087
0	.3107	.2367	.396	.859	1.70	.307	.264	.341	.109
00	.3578	.2781	.454	.980	1.94	.353	.307	.390	.137
000	.4151	.3288	.515	1.123	2.24	.406	.358	.447	.173
0000	.4840	.3904	.593	1.302	2.68	.478	.425	.521	.219
250	.5917	.4877	.754	...	3.20	.616	.572	.715	.260
300	.6837	.5581	.850	...	3.62	.692	.649	.800	.312
350	.7620	.6291	.950	...	4.02	.778	.731	.885	.364
400	.8365	.6969	1.02	...	4.52	.850	.800	.960	.416
500	.9834	.8316	1.18	...	5.28	.995	.945	1.118	.520

[1] For general use.

[2] For rewiring existing conduits.

TABLE 7.—*Number of conductors in conduit or tubing—for general use in new installations*

Wire types RF–32, R, RH, RW, RU, TF, T, and TW

Wire size	Maximum number of wires in conduit or tube								
	1	2	3	4	5	6	7	8	9
18	½	½	½	½	½	½	½	¾	¾
16	½	½	½	½	½	½	¾	¾	¾
14	½	½	½	½	¾	¾	1	1	1
12	½	½	½	¾	¾	1	1	1	1¼
10	½	¾	¾	¾	1	1	1	1¼	1¼
8	½	¾	¾	1	1¼	1¼	1¼	1½	1½
6	½	1	1	1¼	1½	1½	2	2	2
4	½	1¼	[1] 1¼	1½	1½	2	2	2	2½
3	¾	1¼	1¼	1½	2	2	2	2½	2½
2	¾	1¼	1¼	2	2	2	2½	2½	2½
1	¾	1½	1½	2	2½	2½	2½	3	3
0	1	1½	2	2	2½	2½	3	3	3
00	1	2	2	2½	2½	3	3	3	3½
000	1	2	2	2½	3	3	3	3½	3½
0000	1¼	2	2½	3	3	3	3½	3½	4
250	1¼	2½	2½	3	3	3½	4	4	4½
300	1¼	2½	2½	3	3½	4	4	4½	4½
350	1¼	3	3	3½	3½	4	4½	4½	5
400	1½	3	3	3½	4	4	4½	5	5
500	1½	3	3	3½	4	4½	5	5	6

[1] 1 in. for services not over 50 ft long, with not more than 2 quarter bends, and using bare neutral.

TABLE 8—*More than 9 conductors in conduit (between motor and controller, stage pockets, border circuits, sign flashers, and elevator control wires)*

Wire types RF–32, R, RH, RW, RU, TF, T, and TW

Wire size	Maximum number of wires in conduit or tube						
	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	2½ in.	3 in.
18	12	20	35	49	80	115	176
16	10	17	30	41	68	97	150
14	....	10	18	25	40	59	90
12	....	....	15	21	35	50	77
10	....	....	13	17	29	41	64
8	....	....	....	10	17	25	38
6	....	....	....	....	....	15	23

EXAMPLE—

Problem: what size conduit is required for 3 No. 14, 3 No. 10 and 2 No. 6 type RW wires for a new installation.

Solution: from Table 6 select:

No. 14—0.0327 × 3—0.0981
No. 10— .0460 × 3—0.1380
No. 6— .1238 × 2—0.2476
Total 0.4837 sq in.

From Table 5, for more than 3 conductors, 0.60 sq in. represents the smallest conduit, 1¼ in. size, which will receive the wires and be filled to not more than 40 per cent of its total cross-sectional area. However, a 1-in. conduit would receive the 6 smaller wires.

MANUFACTURERS' LITERATURE

Automatic Windows

Vita Automatic Windows. Folder presents features and operation data on the automatically-opening glazed and screened window unit. Plan and section drawings show installation methods for wood or brick construction; diagram and notes give dimensions of the unit and space necessary for its installation. Typical applications are illustrated. An insert drawing gives measurements and details of frame assembly. 6 pp., illus. Vita Automatic Windows, Inc., 101 Park Ave., New York 17, N. Y.

Aluminum Sills

Window Sills and Thresholds — Alcoa Aluminum in Architecture. Use and production of aluminum as a building material for sills and thresholds are discussed, and a line of stock shapes is presented. Profile sections, sketches, and size and weight tables are given for each type. Typical details for various wall and floor constructions are included, along with specifications and notes on special designs and installation procedures. Charts and graphs give performance records and test results on the material. 20 pp., illus. Aluminum Company of America, 801 Gulf Bldg., Pittsburgh 19, Pa.*

Plastic Panels

Corrulux Translucent Structural Panels — A New Idea In Building. Folder pictures the standard colors available in the corrugated plastic panels, and describes features and uses. Illustrations depict the material employed as glazing, skylights, partitions, greenhouses, awnings, store fronts and facings. 4 pp., illus. Corrulux Corp., P.O. Box 6524, Houston 5, Texas.

Swimming Pool Drainage

Swimming Pool Drainage Products Manual SP-3. Gives ideas and suggestions on pool layouts together with details of drainage methods to be used in the construction or remodeling of pools. Information is included on water supply and circulation, and various fittings for indoor and outdoor swimming, wading and diving pools, dressing rooms, etc. Drawings indicate typical designs for many types of municipal, commercial, private and institutional pools. 32 pp., illus. Josam Manufacturing Co., Dept. SP-2, 1302 Ontario, Cleveland 13, Ohio.*

Baseboard Heating

- *Functional Heating Design With National Art Baseboard.* Folder discusses the unit and pictures types available. Cut away portions show construction and operation features. Assembly pieces are also illustrated. Dimensions, details and ratings are given in drawings and tables. 4 pp., illus. The National Radiator Co., Johnstown, Pa.
- *Comfort Floorlevel — General Automatic Hot Water Baseboard Heating.* Presents features of baseboard heating, and of this particular type. A circuit layout diagram is given for 2-story and duplex homes. Sample specifications and illustrations of the unit are included along with boiler and burner equipment available for use with the baseboard heaters. 4 pp., illus. General Automatic Products Corp. (formerly General Oil Burner Corp.), 2300 Sinclair Lane, Baltimore 13, Md.
- *Baseboard Heating With U.S. Radiant Baseboard.* Treats on function of heating, and gives results of comfort conditions in heated rooms. The radiant baseboards are compared with other heating methods. Photos show full and cut-away views of the unit, available accessories and fittings, the manufacturing process, and the various steps necessary for installation. Sample plan and isometric layouts, calculation sheet, output characteristics table, and capacity chart are included. 34 pp., illus. United States Radiator Corp., 127 Campbell Ave., N, Detroit, Mich.*
- *Fedders Wall Radiation (Catalog WR-C1).* Gives applications and features of a type similar to baseboard heating, designed for mounting at any desired height under windows or along walls. The basic unit and cover types available are presented with illustrations, details, specifications and dimensions. Several tables give capacity per ft of length. 6 pp., illus. Fedders-Quigan Corp., Buffalo 7, N. Y.*

Metal Building Panels

Fenestra Steel and Aluminum Building Panels. Four types of metal building panels for use in floors, walls, roofs and partitions are described and illustrated. Among the topics covered are: acoustic treatment, fire resistance, panel electrification, waterproofing and insulation. Tables give ratings, spacings, allowable loads, sizes and weights. Details and sections depict installation methods for a multitude of panel uses and types of construction. Data are also included in reinforcing floor forms. 40 pp., illus. Detroit Steel Products Co., 2250 E. Grand Blvd., Detroit 11, Mich.*

Boiler and Firing Units

Your Steam Costs! Modernize Your Boiler Room! A series of 7 folders describe the complete line of York Power Steam-Pak Generators. Each includes descriptive specifications and dimensions of a particular model boiler. These include: (1) Gas fired for natural, manufactured or mixed gas; (2) Oil fired for light fuel oil; (3) Combination firing for No. 3 oil and gas; (4) Oil fired for No. 5 fuel oil; (5) Combination firing for No. 5 oil and gas; (6) Heavy oil fired for heavy Bunker C oil; and (7) Combination firing for No. 6 oil and gas. 4 pp. each, illus. York-Shipley, Inc., 319 Jessop Place, York, Penn.

Fans

Standards, Definitions, Terms and Test Codes for Centrifugal, Axial and Propeller Fans (Bulletin 110). Covers the classification of air-moving equipment, standards, terms and definitions in use by the fan industry, and standard codes for air and sound measurements. Tables give data and size standards of various types of fans. Fan arrangements are illus-

(*Continued on page 284*)

Other product information in Sweet's File, 1950.

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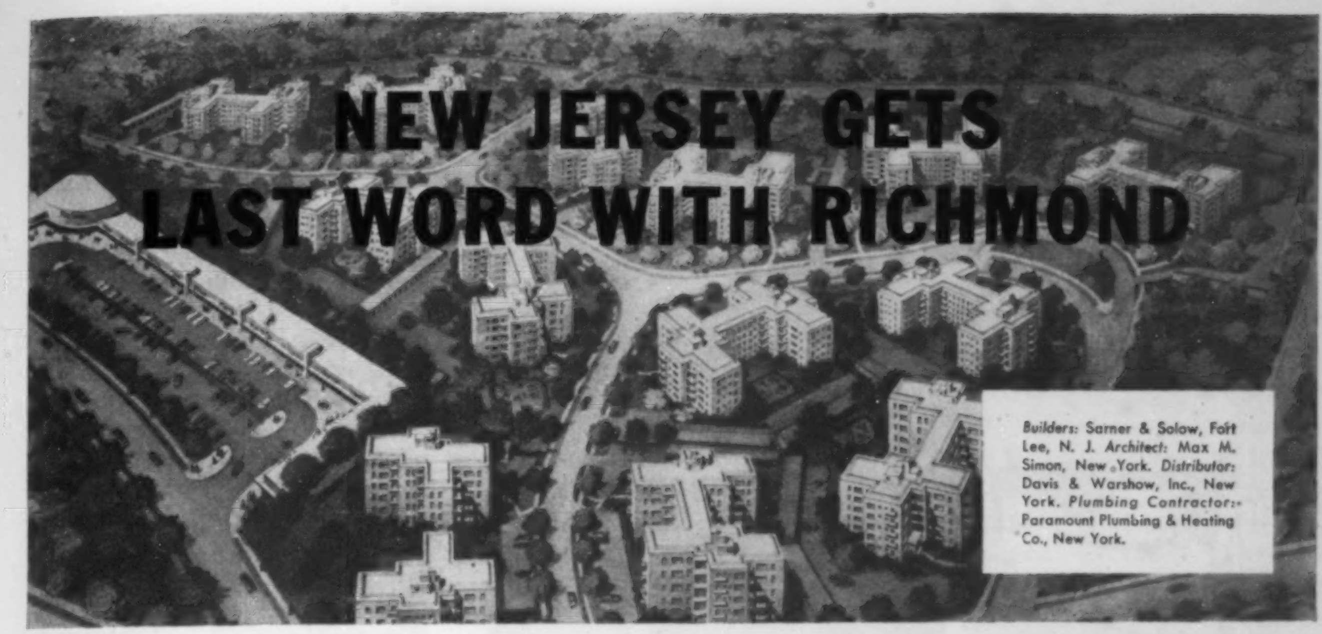

Builders: Sarner & Solow, Fort Lee, N. J. *Architect:* Max M. Simon, New York. *Distributor:* Davis & Warshow, Inc., New York. *Plumbing Contractor:* Paramount Plumbing & Heating Co., New York.

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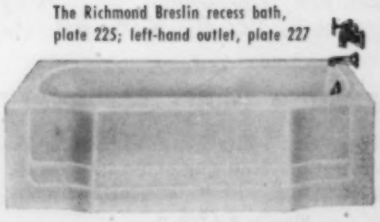
The Richmond Londo lavatory with center-set fitting, plate 869

The Richmond Phoenix syphon-action 2-piece close-coupled closet combination, plate G-217

The Richmond Seaford flat-rim sink with center outlet, plate 2021



The Richmond Breslin recess bath, plate 225; left-hand outlet, plate 227

The Richmond Traxlor sink and right-hand tray combination, plate 2440, plate 2441 left-hand tray

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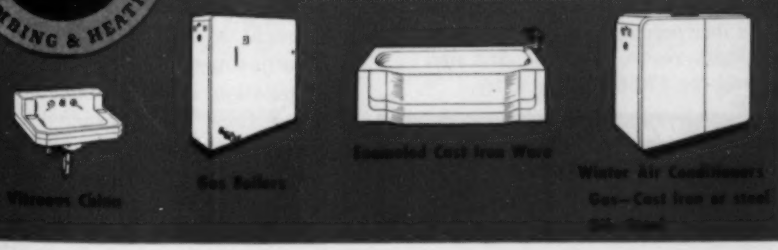

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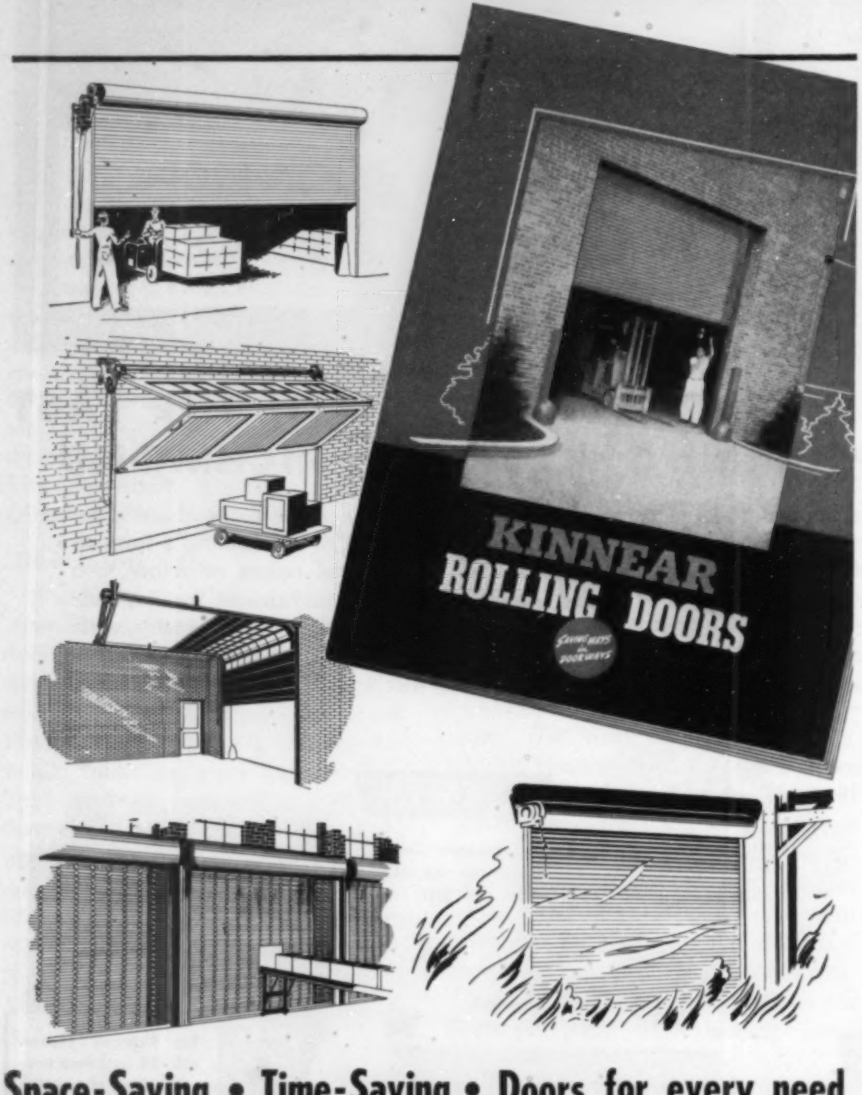

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WASHINGTON

(*Continued from page 21*)

campuses to house faculty and students under previous programs will employ these loans to refurbish the properties, make them more livable and permanent. Congress wrote the bill in such a way that housing to be secured with the loans can be new or it can be provided through rehabilitation, alteration, conversion or improvement of existing structures not now adequate for the proposed dwelling use.

Interestingly enough, the legislators provided that the housing so constructed or improved must not be of elaborate or extravagant design or materials.

Further, no such loans can be made by HHFA unless the educational institution seeking them proves it cannot secure funds for such housing from other sources on the same terms or conditions generally comparable to those specified in the Act.

Program Moves Ahead

This loan scheme for colleges already has been activated. Housing Administrator Foley has borrowed Ormond E. Loomis, assistant to the Home Loan Bank Board, and designated him as an interim officer to organize loan procedures. He will be given two or three months to establish the basis for operation, then a new executive will be appointed.

There was no indication of when rules and regulations would be issued, or when first applications from colleges would be received. But if HHFA moves as rapidly as it has on other phases of the new Housing Act, the time should not be long. Of course, the straight loan program for colleges is new to the HHFA; but it certainly has plenty of precedent in counterparts in other agencies, and even within housing practices.

These loans to colleges represented one of the less controversial aspects of the latest housing bill. There was little dispute that colleges have been faced with unusually heavy housing problems brought on largely by the Servicemen's Readjustment Act, and aggravated by population increases. The educational institutions are considered good risks and the $300 million total loan figure went through Congress without being seriously challenged.

(*Continued on page 182*)

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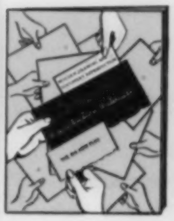

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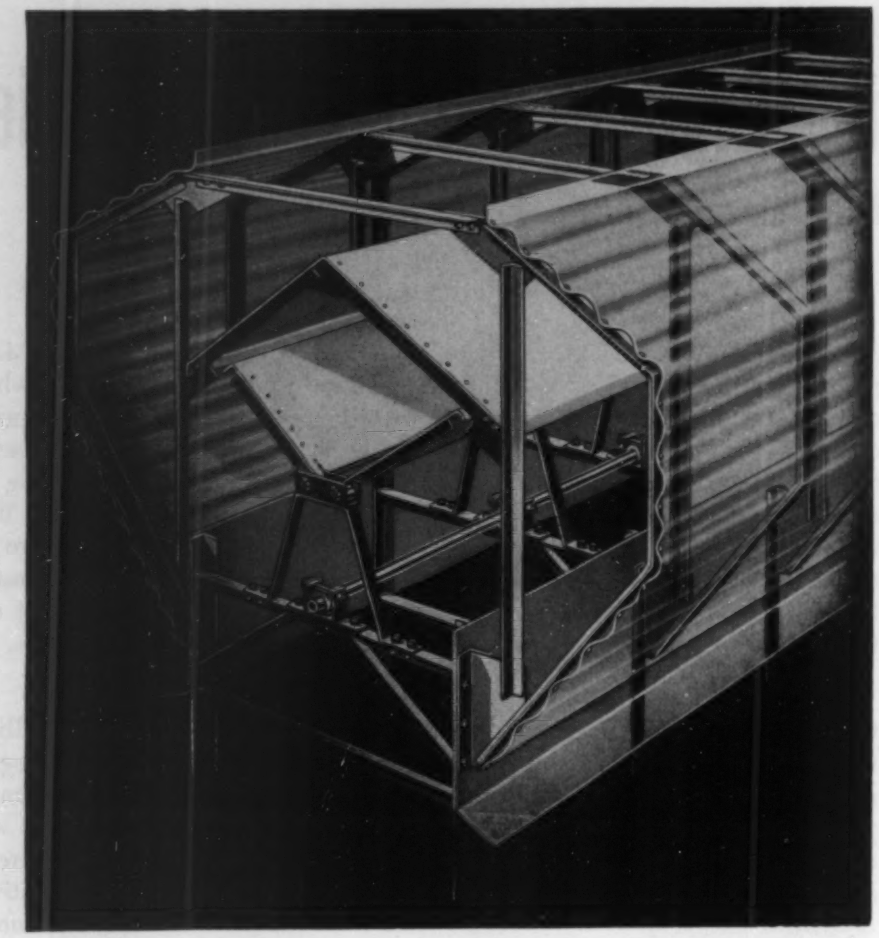

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WASHINGTON

(*Continued from page 180*)

Housing Amendments, 1950

Following are compromises worked out by the conference committee on the Housing Act of 1950, effective since the bill got the Presidential signature April 20:

- FHA Title I, improvement and repair loan insurance, extended to July 1, 1955. New formula limits total amount of outstanding insured loans to $1,250 million, an increase of $5 million.
- A new Sec. 8, added to Title I, provides a new mortgage insurance program for very low-cost homes in suburban and outlying country areas. This replaces former FHA "class 3" loans and follows the well-known FHA processing procedures. A top sum of $250 million was provided for this program; $100 million now, and the balance at the direction of the President. Under the amendments, dollar mortgage limit for these loans changes from $4500 to $4750 (95 per cent up to $5000 of appraised value) where the mortgagor is the owner-occupant; and $4250 (85 per cent up to $5000 of appraised value) where the mortgagor is the operative builder. At the Federal Housing Commissioner's discretion, these limits can go up to $5600 and $5000, respectively, where higher construction costs in certain areas make it necessary. Maturity is 30 years, and maximum insurance rate cannot exceed five per cent exclusive of premium charges. A sum of $1 million was transferred from the existing Title I fund to carry out the low-cost home program.
- Title II mortgage insurance authorization is increased by $2250 million to total authorization of not more than $9 billion. Of the increase, $1 billion is immediately available.
- Title II amended to provide incentives for production of lower-cost homes; emphasis will be on production of three- and four-bedroom units.
- Federal Housing Commissioner is directed to channel benefits of Sec. 207 rental housing loan insurance to projects adequate for families with children and in which every effort has been made to achieve moderate rents. FHA said changes made in dollar amount limitations on mortgages insured under Sec. 207 provide an economically sound method for insurance of loans on rental

(*Continued on page 184*)

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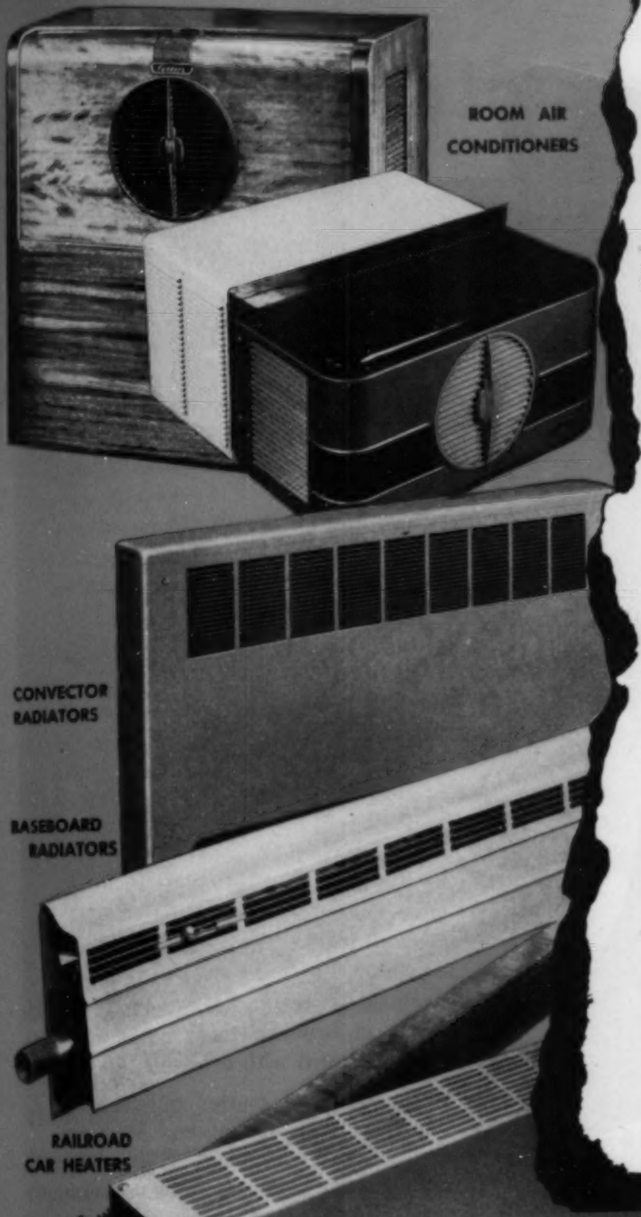
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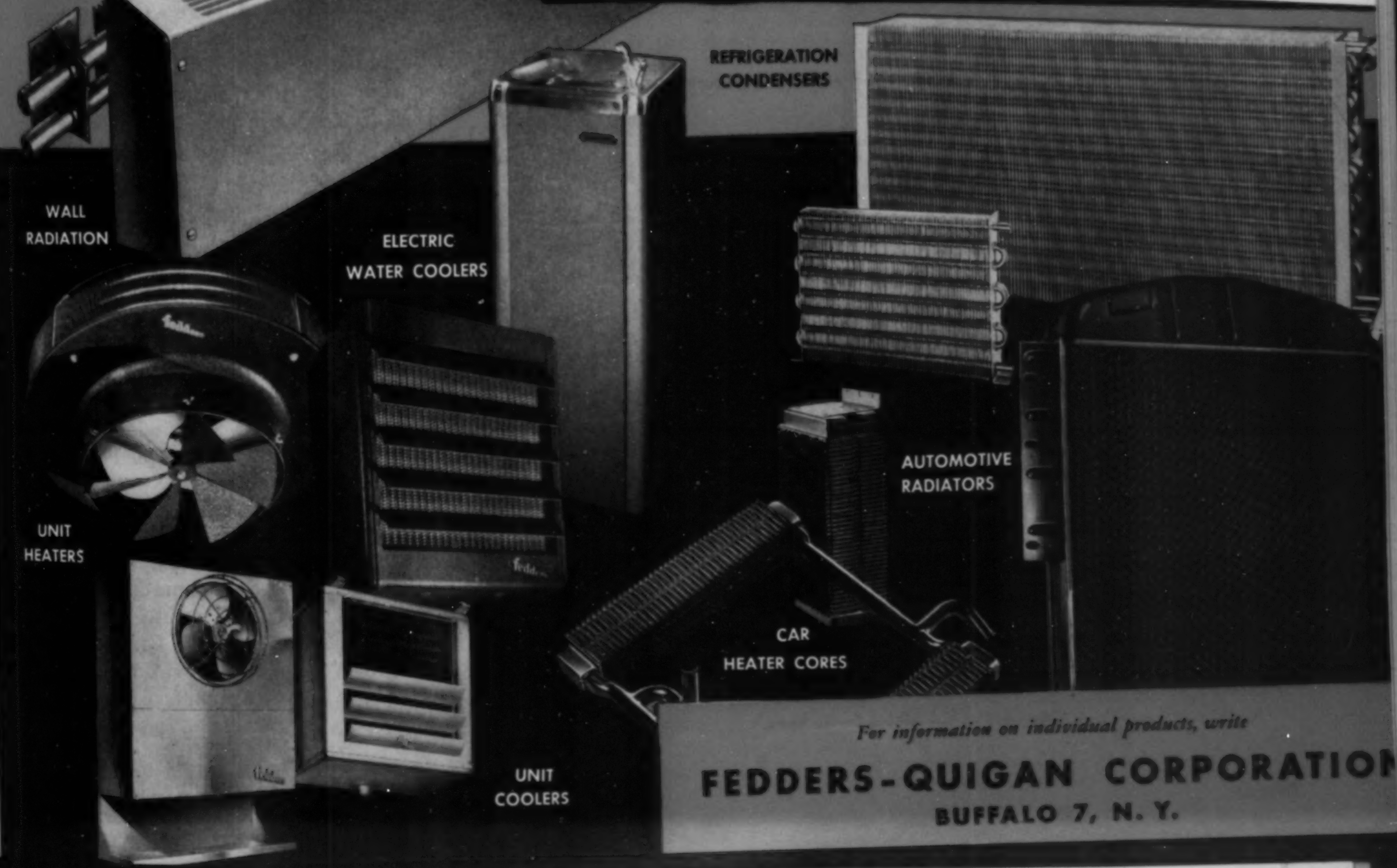
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THE RECORD REPORTS

WASHINGTON

(*Continued from page 182*)

housing while continuing the stimulation of rental housing construction formerly provided by the temporary Sec. 608 which expired March 1.

- A new Sec. 213 liberalizes the former provisions for FHA insurance of mortgage loans for cooperative housing projects. Warren J. Lockwood, formerly assistant to the FHA Commissioner, now will administer this cooperative housing assistance program as Assistant to the Commissioner.
- Congress increased by $500 million the mortgage insurance authority for insuring loans under Sec. 608, permitting FHA to process applications received in field offices on or before March 1; but FHA announced immediately that all Sec. 608 applications received after February 15 would be laid aside for future consideration if and when more money for processing them was made available. The agency has set no time limit for issuing 608 commitments, and promises there will be no preference shown in handling those cases which can be covered with available funds.
- The secondary market purchase authority of Federal National Mortgage Association was increased $250 million. Builders were more concerned, however, with the fact that Congress took away FNMA's previous right to deal in future commitments. Hereafter, the agency can buy only after the mortgage has been arranged, not on a future promise basis. Builders say this will make it much harder to arrange insured loans.

Miscellaneous new provisions cover disposal of war and veterans' housing; eight distinct changes in the Servicemen's Readjustment Act governing housing loans to veterans; standby authority for $150 million in direct loans to veterans when they cannot obtain four per cent locally; a $300 million direct loan program for student and faculty housing at colleges and universities.

VA Now Enforcing Standards

One thing the new Housing Act does is to put teeth in the minimum construction standards of the Veterans Administration. Heretofore, these VA standards which parallel the FHA requirements have been on a voluntary basis —

(*Continued on page 186*)

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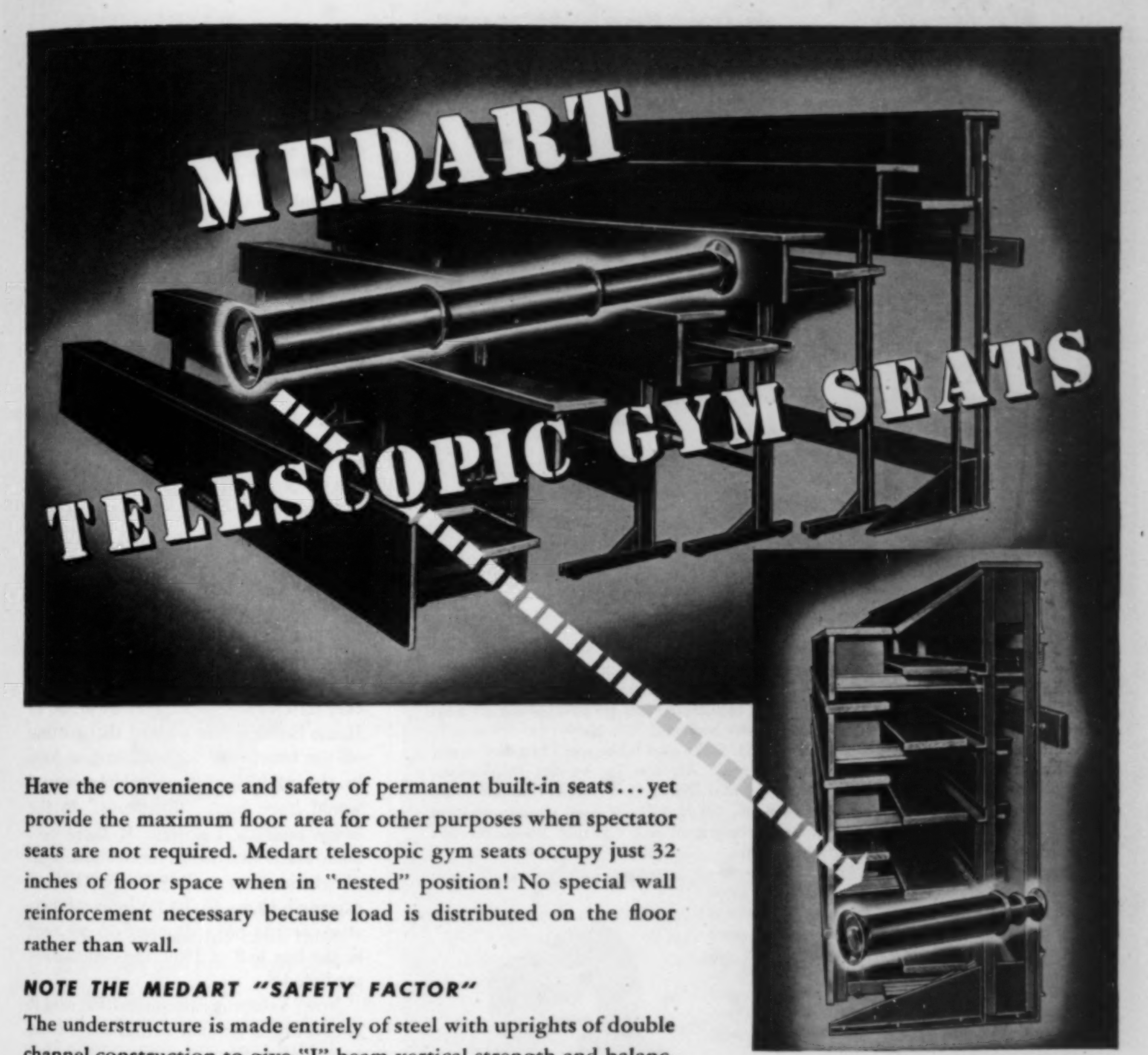

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THEY INSTALLED DRAVO HEATERS
THEY SAVED
$4,372.00 PER YEAR

*Rosedale Foundry and Machine Company, Pittsburgh, Pa.

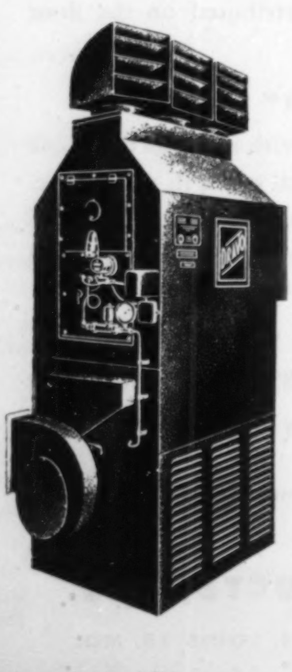
Like many other metalworking plants, Rosedale, producers of Meehanite Metal castings, depended for years on salamanders for heating. Everyone *assumed* that any more modern method would cost too much, and probably couldn't heat the high-roofed, metal structure much better anyway.

But no one was happy about the situation. Coke and labor were big cost items. Production was lost while men "thawed out". Air was smoky and sulphurous.

So Rosedale investigated, and found (1) that Dravo *Counterflo* Heaters could do the job for LESS cost than salamanders, (2) that Dravo was already heating many similar structures with complete satisfaction, and (3) that Dravo Heaters would help clear up the polluted atmosphere.

Result: four Dravo *Counterflo* Heaters were installed, eliminating 39 salamanders. Yearly cost-reduction is $4372. Even with 25% annual amortization, this company is currently saving $500 a year. After four years the investment will be completely written off, and the entire saving will be velvet. The indirect savings—improved production, greater employee comfort, elimination of coke fumes, and saving in floor space—are extra dividends. Everybody's happy about the heating now.

No one can afford, today, to put up with old-fashioned, inadequate heating equipment—any more than to use old-fashioned production machines. Let us review your heating problems, and provide you with some specific examples of the savings Dravo *Counterflo* Heaters are making for others—and that they can make for you. Consult your classified telephone directory for the name of the local representative—or write us direct.



DRAVO
CORPORATION
DRAVO BUILDING, PITTSBURGH 22, PA.

Sales Representatives in Principal Cities

Mfd. and Sold in Canada by Marine Industries, Ltd., Sorel, Quebec

WASHINGTON

(*Continued from page 184*)

ever since VA adopted its own schedule 18 months ago. Many builders have sought to comply with these rules to qualify for advance certification of reasonable value, but there have been instances of shoddy G.I. construction.

Veterans now have assurance, under terms of the new law, that all G.I. loan houses started after the middle of June will have to conform to the Veterans Administration minimum standards. Under the Servicemen's Readjustment Act, the price paid for homes constructed with guaranteed loans cannot exceed the reasonable value as determined by a VA appraiser.

At the same time, it was announced that Sec. 505a loans, the combination-type mortgages insured by FHA and guaranteed by VA, would be terminated on October 20, 1950. To bring about the orderly removal of these 505a's from building operations, the veterans' agency has set up a series of steps to be taken each month looking toward the termination date. The National Association of Home Builders had warned that cutting off the benefits of the combination loan in the middle of the building season would have been "disastrous" to the home building industry. If these Sec. 505a loans had been terminated completely in June or July, as NAHB had expected them to be, volume of new starts would have dropped 50 per cent in the last half of 1950, the Association predicted.

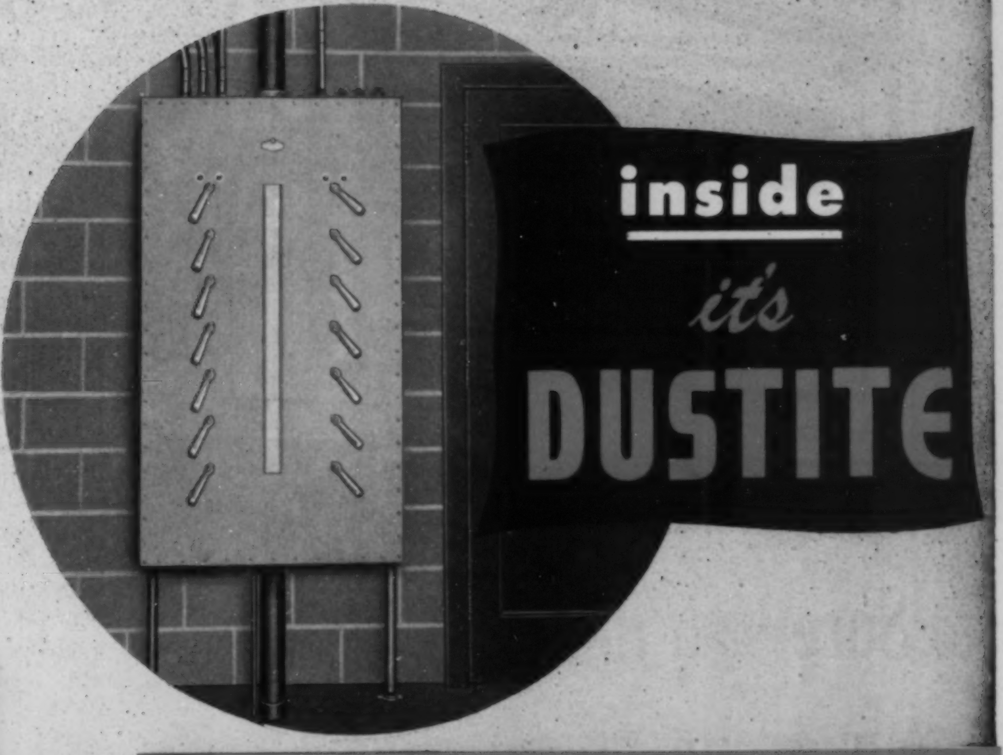
Now, Veterans Administration said it is effecting a gradual withdrawal of the combination loan benefits, giving full consideration to the interests of the home building industry. Home builders themselves would most probably give an argument against this VA stand, however. NAHB made it clear that it was advised of the recent drop (from 4½ to 4¼) of the percentage rate on FHA-insured mortgages, but not consulted in connection with the move.

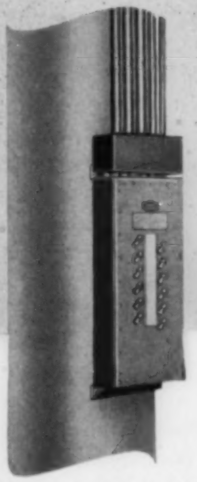
Hospital Programs

In recent actions Congress has been bent on providing additional hospital space, both federal and non-federal, at a brisk pace in spite of efforts in certain quarters to retard the building programs for economy and other

(*Continued on page 188*)

No hazard here . . . *because*





Typical lighting panelboard illustrated above; typical power panelboard in circle.

Designed for use where carbon black, coal or coke dust, grain dust and other dust conditions are hazards.

Approved by Underwriters' Laboratories, Inc., for Class II, Groups E, F & G Hazardous Locations.

FOR THOSE COMPANIES plagued with the hazards of volatile dust, the Frank Adam Electric Company has designed special light and power panelboards that provide *dust-free* performance, safety and dependability . . . regardless of the external dust condition . . . because FA DUSTITE PANELBOARDS remain dust-free *inside.*

These FA DUSTITE PANELBOARDS seal out the hazards of dust by means of dust-tight welded hubs for conduit outlets . . . welded box corners . . . external mounting brackets welded to back of cabinet . . . and a solid steel front plate with gasket protection all around.

The circuits are externally operated by a dust-tight mechanism of FA design. The handles operate through dust-tight bushings and engage the regular handles on the circuit breakers *inside* the cabinet. ON and OFF positions are indicated on the front of the cabinet.

And there's no reason to get inside the cabinet because all FA DUSTITE PANELBOARDS are of the automatic circuit breaker type, which provide protection without need for replacement of any parts.

Capacities 15 to 600 amps., 250 volts AC or DC, and 600 volts AC, main lugs only, or main circuit breakers.

Avoid the hazards of dust in your light and power panelboards by making them FA DUSTITE.

Inquiries solicited . . . just address your nearest FA Representative (he's listed in Sweet's) or write for Bulletin 302.

FA TRADE MARK

Frank Adam Electric Co.
ST. LOUIS 13, MISSOURI

Makers of BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER

WASHINGTON

(*Continued from page 186*)

reasons. First the House restored the full amount of federal aid for the U.S. Public Health Service hospital construction program, voting the full $150 million for the coming fiscal year that it had authorized in amending the Hill-Burton Act last fall. Then it rushed through the Rankin bill putting back into the Veterans Administration hospital building program the 24 new structures and expansion of 14 others that President Truman deleted over a year ago.

Cost of the additional VA hospital construction would be $237 million, an amount already approved for appropriation. But in connection with this new legislation there was the big question mark concerning Presidential approval. It was argued by some that since the Chief Executive himself cut out the additional VA hospital work on advice of the Budget Bureau and the veterans' agency, he would not permit the Rankin bill to become law. The bill's author described it as a directive which the President could not ignore. At this writing, final approval was doubtful, however. The Senate had not yet acted.

The increase in federal aid funds for the Hill-Burton Act construction was more understandable. Last year, in amending the law — the Federal Hospital Construction Act — to change the percentage formula governing federal and state project contributions, members of Congress then approved a doubling of the $75 million per year allotment of federal funds to states. This spring, however, the House Appropriations Committee, in one of its heavy economy moods, voted out the old figure of $75 million for the coming fiscal year. The full House was quick to put the total up to the $150 million it had authorized, and there it stood as the measure went over to the Senate.

Meanwhile, the national hospital program, under guidance of U.S. Public Health, had reached the total of 1145 projects approved as of March 1. Final approval of federal funds from allotment for fiscal years 1951 and 1952 was deferred pending availability of the sum through the appropriations bill now being discussed. The March 1 data showed that total estimated cost of the

(*Continued on page 190*)

CONSTRUCTION BY
MERRITT-CHAPMAN & SCOTT CORPORATION

Sure sign that your architectural plans are in competent building hands!

Construction by Merritt-Chapman & Scott—a sure sign that your assignment, *large* or *small*, is safely entrusted to an organization with extensive experience in every building field . . . a nationally known construction concern possessing specialized facilities that make for maximum speed and economy.

Construction by Merritt-Chapman & Scott—your assurance that full attention will be given to every detail, that the project will be completed as designed . . . and that the men of M-C&S will work in close harmony with you. A factual record of Merritt-Chapman & Scott's ability to solve the most challenging problems is contained in a new brochure. It will be sent gladly upon request.

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Founded in 1860 . . . now in our 90th year

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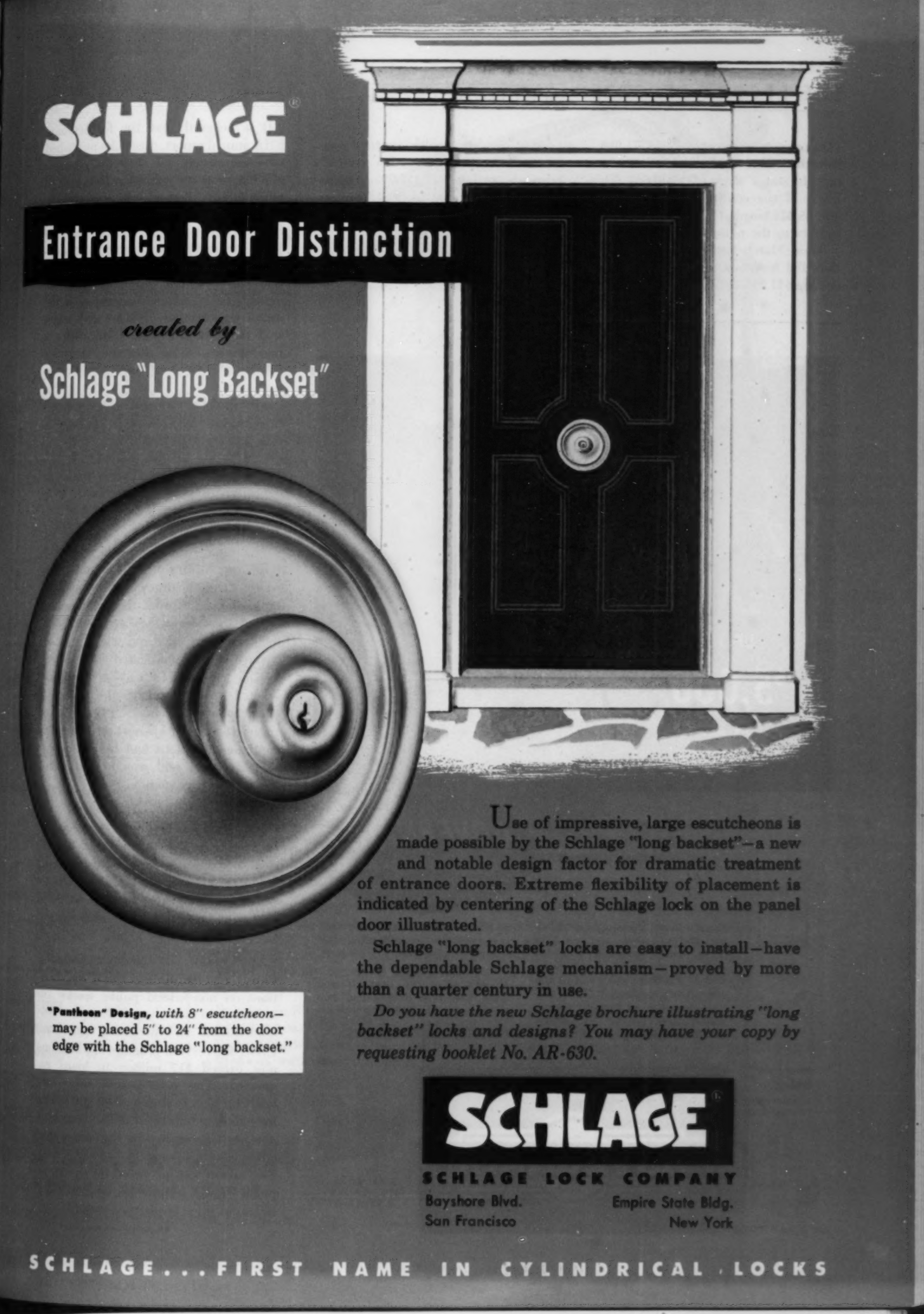

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Entrance Door Distinction

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Schlage "Long Backset"

"Pantheon" Design, *with 8" escutcheon*—may be placed 5" to 24" from the door edge with the Schlage "long backset."

Use of impressive, large escutcheons is made possible by the Schlage "long backset"—a new and notable design factor for dramatic treatment of entrance doors. Extreme flexibility of placement is indicated by centering of the Schlage lock on the panel door illustrated.

Schlage "long backset" locks are easy to install—have the dependable Schlage mechanism—proved by more than a quarter century in use.

Do you have the new Schlage brochure illustrating "long backset" locks and designs? You may have your copy by requesting booklet No. AR-630.

SCHLAGE®

SCHLAGE LOCK COMPANY

Bayshore Blvd.
San Francisco

Empire State Bldg.
New York

SCHLAGE...FIRST NAME IN CYLINDRICAL LOCKS

WASHINGTON *(Cont. from page 188)*

1145 projects now approved is $771,086,906; the federal share being $259,856,041, and the states' share $511,230,865. This much of the continuing program will add 55,435 hospital beds and 186 health centers to the nation's facilities.

As of March 1, there were in operation 158 hospitals under this program costing $41,836,712 and containing 3662 beds. Complete health centers numbered 44. Under construction were 574 hospitals costing $427,112,905, containing 30,754 beds; and 75 health centers. Initially approved and awaiting final confirmation were 413 projected hospitals to cost $302,137,289, and to furnish 21,019 additional beds; and 67 more health centers.

Shorts

- It is believed that the forthcoming FHA annual report, due to be published later this month, will show on the basis of FHA property valuation that cost of single-family homes with mortgages insured under Sec. 203 (of the National Housing Act) during the last half of 1949 averaged $8507. The median valuation probably will show up slightly lower than this — around $8100, close to the average figure on existing homes in the same classification. FHA spokesmen said the annual report would carry a breakdown of these average valuations by the nine Census Bureau regions as well as for the U.S. as a whole, giving figures for both new and existing dwellings covered by insured mortgages. The percentage breakdown is being arranged on a 12-step scale with brackets of property valuation extending from less than $4000 to more than $16,000.

- The final breakup in the fantastic three-year history of the Lustron Corp. was at hand. Attorneys for Reconstruction Finance Corp., the government agency that loaned Lustron some $37.5 million for production and sale of enamel-covered steel prefabricated houses, said a request for sale of the assets was being entered in federal court at Columbus, Ohio, home of the Lustron firm. Negotiations for an out-of-court settlement to continue operations had broken down. The sale, it was said, would be either by sealed bid or by auction.

- Sen. Burnet Maybank, chairman of the Senate Banking Committee, threatened to sponsor legislation for $1 billion in direct government housing loans to veterans if private lending agencies continued to tighten up on such loans.

- Applications for advance planning loans for preparing plans and specifications on non-federal public works are coming into the General Services Administration in increasing numbers. Under the revived program applications now exceed $17 million in loans requested. The interest-free loans are made by GSA to states, cities and towns for planning billions of dollars worth of new construction. Under the former program, which lapsed July 1, 1947, over $50 million was advanced for design of public works estimated to cost $2.7 billion in price levels then current.

(*Continued on page 194*)

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UNIT COOLERS
EVAPORATIVE CONDENSERS
AIR CONDITIONERS
BLAST COILS FOR HEATING & COOLING
ORIGINATORS OF COMPLETELY PACKAGED AIR CONDITIONERS
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SAVE UP TO $5,000 ON AIR CONDITIONING!

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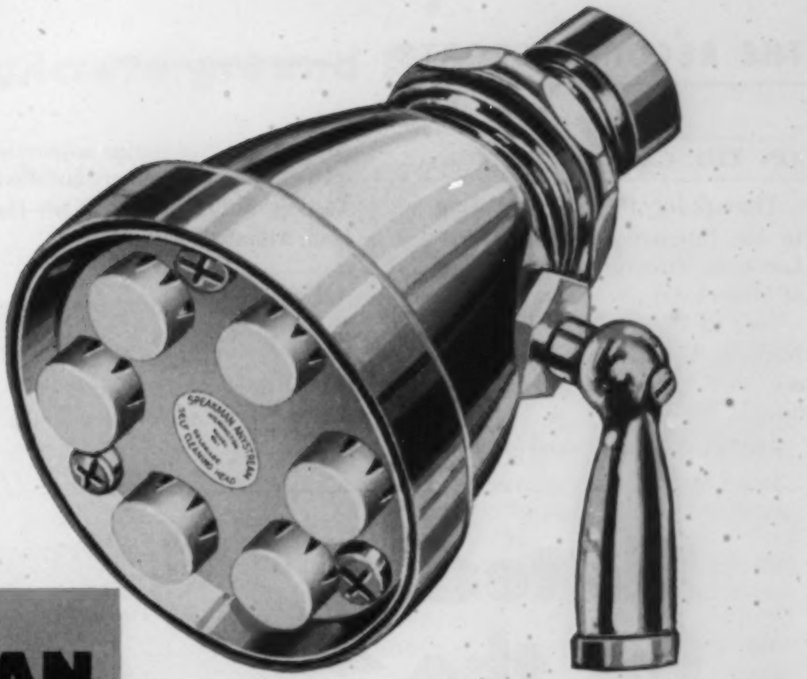
COMPLETELY PACKAGED AIR CONDITIONER

Save water! Save space! Save installation time and money! Save operating costs! Yes, install Governair and *save from $50 to $200 for each ton* of the completely packaged Governair unit designed to fit your needs! Experience proves Governair can save you up to $5,000 on a 50-ton Governair unit that gives greater dependability and more "engineered efficiency" than ever before!

If you want the best—if you want the most economical and reliable air-conditioning unit on the market . . . CHOOSE GOVERNAIR and SAVE!

SPEAKMAN
ANYSTREAM Shower Head

. . . Handsomely designed for smart appearance . . . easily installed . . . used in finest hotels, clubs, schools, institutions and homes in America. Integral ball joint . . . concealed volume control. Can be equipped with Allen Set Screw to prevent vandalism. ½" I.P.S. female inlet.



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ANYSTREAM SENTINEL!

a turn of the lever gives

NEEDLE SPRAY
for
stimulation

NORMAL SPRAY
for
relaxation

FLOOD SPRAY
for no-splash
rinsing

NEVER THIS!
Anystream is
self-cleaning

You'll find the finest shower combination for schools, colleges and universities—whether in dormitories, fraternity houses, or in connection with athletic activities—is the Speakman *Sentinel*—consisting of the famous Anystream Shower Head and the *Sentinel* Balanced Pressure Mixing Valve. It's the shower that meets with instant, all-round approval because it gives perfect bathing comfort, hot-water economy and remarkable ease of maintenance.

ANYSTREAM Shower Heads

Vigorous, hard-playing young people are always enthusiastic about the satisfying shower derived from the Anystream Self-Cleaning Shower Head. This water-saving shower head won't clog . . . has no pin-point holes to stop up . . . gives bathers a choice of showers—normal, needle or flood. Durable and dependable, it makes possible as much as 50% lower water consumption.

SENTINEL Balanced Pressure Mixing Valve

The Speakman *Sentinel* Balanced Pressure Mixing Valve holds shower temperatures steady *despite water pressure fluctuations.* The miraculous f-l-o-a-t-i-n-g piston in the valve works on water pressure alone. It prevents sudden surges of icy cold or steaming hot water that often cause injury. The piston is easily removed for servicing *without shutting down the water supply to the valve.*

Speakman Showers and Fixtures are distributed nationally through wholesale plumbing supply dealers and contractors. From *Si-Flo* Flush Valves—the valve that whispers—to Speakman Self-Closing Metering Lavatory Fixtures that cut water-waste, it pays to specify Speakman—traditionally the best in brass.

In Our Eighty-First Year

SPEAKMAN

SHOWERS AND FIXTURES

SPEAKMAN COMPANY, WILMINGTON, DELAWARE

see our CATALOG in SWEET'S FILE ARCHITECTURAL

See Sweet's Architectural File for condensed catalog or write directly.

(*Continued from page 190*)

ON THE CALENDAR

Through July 16: Exhibition of entries to the International Competition for Low-Cost Furniture Design, Museum of Modern Art, New York, N. Y.

June 12–15: 43rd Annual Convention, National Association of Building Owners, and Managers, Olympic Hotel, Seattle, Wash.

June 26–30: 53rd Annual Meeting and Ninth Exhibit of testing apparatus and related equipment, American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J.

OFFICE NOTES

Offices Opened, Reopened

- Dean M. Du Boff, Architect and Engineer, has announced the opening of an office at 106 E. State St., Peoria, Ill.

- Arthur D. Janssen, A.I.A., Architect, and William H. Daseking, Architect, Associate, announce the opening of their new offices at 1616 El Camino Real, Menlo Park, Calif.

- Olsen and Olsen, Architects, announce the opening of their new office building, 2437 Market St., Seattle, Wash.

New Firms, Firm Changes

- Max Alper, Architect, has announced admission to his firm as a partner of Zalman Alper. The firm, to be known as Alper and Alper, Architects, will continue the practice from offices at 8 South Dearborn St., Chicago 3, Ill.

- Following the recent death of J. C Berry of the firm of J. C. Berry and Howard Ensign, Architects, 312-B W. 10th Ave., Amarillo, Tex., Mr. Ensign has announced that he will continue the practice at the same address under the name of M. Howard Ensign.

- Marvin G. Probst, in affiliation with Graham, Anderson, Probst & White, announces the establishment of an office for the practice of architecture at Room 772, 612 S. Flower St., Los Angeles 17, Calif.

- Theodore Steinmeyer wishes to announce that his firm name is Theodore Steinmeyer, Architect. About two-and-a-half years ago this firm was a partnership, but is now to be listed as the above. The address is 714 S. Kirkwood Rd., Kirkwood, Mo.

- Rutherford L. Stinard, P.E., formerly in the New York City office of Trane Co., has opened his own office at 51 E. 42nd St., New York, N. Y.

New Addresses

The following new addresses have been announced:

Bernard J. Friedman, Architect, 18 Broadway Village, Tucson, Ariz.

Gaudreau and Gaudreau, Architects, Professional Bldg., 330 N. Charles St., Baltimore 1, Md.

Gibbons & Heidtmann, Architects, 211 E. 37th St., New York 16, N. Y.

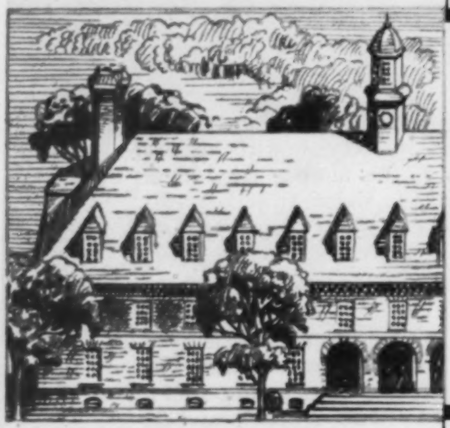
Daniel Laitin, Architect, 200 E. 37th St., New York 16, N. Y.

Vincent Rother, Architects, 1115 Sherbrooke St. W., Montreal, Que.

(*Continued on page 196*)

Slated for the Future

with confidence



THE YOUTH

---endowed by our great American educational system, faces a challenging future *with confidence*.

THE BUCKINGHAM SLATE ROOF

---endowed by the miracles of nature, gives *permanent** protection to the beauty and usefulness of the architects creations and is specified throughout America *with confidence*.

* Over 150 years on the roof without fading or decay.

PARTIAL LIST OF COLLEGES USING BUCKINGHAM SLATE

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Duke University
Florida A. & M. College
Georgetown University
Harvard School of Business Administration
Radcliffe College
Rutgers College
United States Military Academy
United States Naval Academy
University of Alabama
University of Georgia
University of North Carolina
University of Rochester
University of South Carolina
University of Virginia
University of West Virginia

HELPFUL FACTS ABOUT BUCKINGHAM SLATE

by R. Notvest, Consulting Engineer, National Slate Assn. 1921-26

. . . "has outstanding texture and toughness not equaled by any other slate in the U.S."

. . . "no fading under weather" --- "dignified blue-black color is permanent"

...In absorption test--"stands much higher than any other slate in the country"

..."no dirty and unsightly rust streak through decomposition of iron pyrites"

. . . "will withstand without cracking higher temperatures and sudden changes of the same better than any other slate in U.S."

. . . "a permanent repairless roof of pleasing appearance" -- "the best roofing material available today".

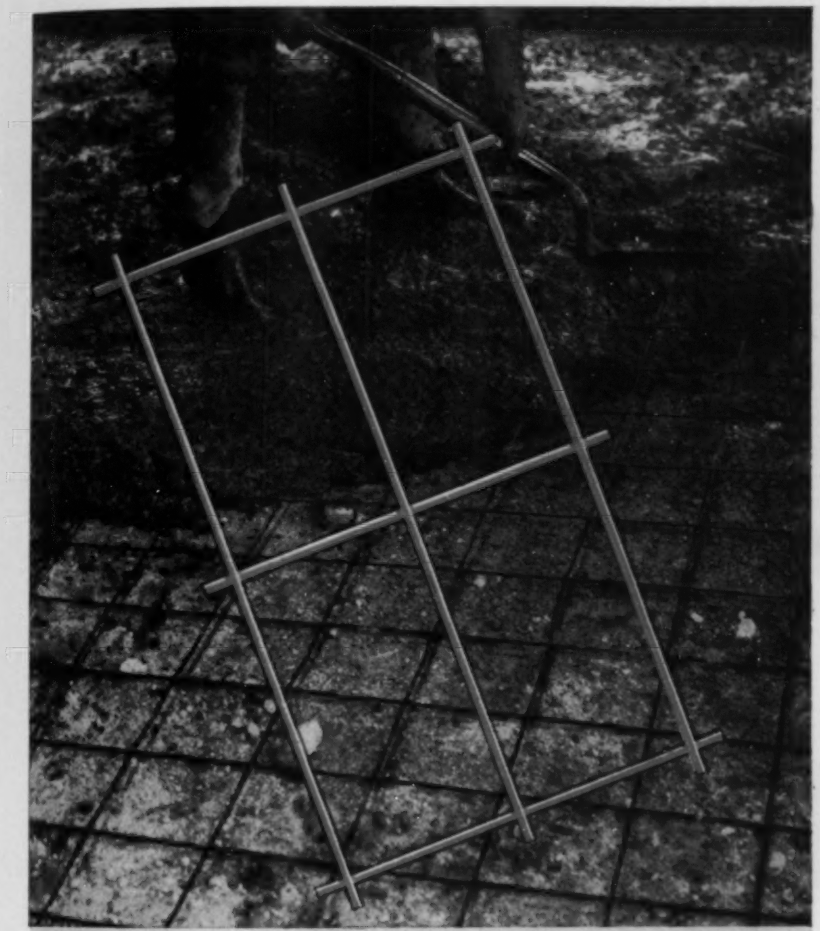
WRITE *for samples and literature*

BUCKINGHAM-VIRGINIA SLATE CORP.

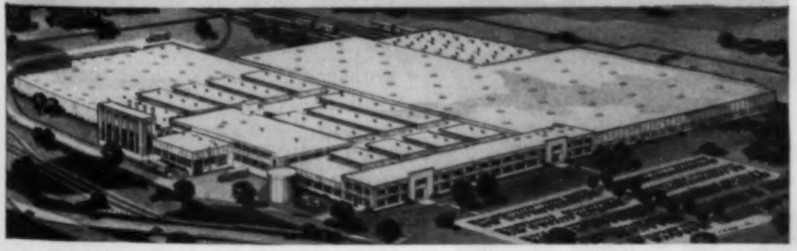
1103 EAST MAIN STREET • RICHMOND, VIRGINIA

For crack control in concrete ground slabs

specify American Welded Wire Fabric



In the Continental Can Company's new plant at Pittsburgh, Pa., acres and acres of concrete flooring were laid on the ground. These slabs will be subjected to ponderous loads of machinery, to the customary heavy traffic encountered in industrial plants. They are laid on a tamped subgrade and, as further insurance against excessive cracking, are reinforced with American Welded Wire Fabric.



Architects and construction engineers have long recognized the need for distributed reinforcement in concrete slabs which rest on the ground. That is why so many of them specify American Welded Wire Fabric for concrete factory floors, driveways, sidewalks, etc.

Closely and accurately spaced, the many high tensile strength steel members of American Welded Wire Fabric fortify all parts of the slab. They minimize the effect of crack-causing stresses and strains, such as the impact of superimposed loads, friction with the subgrade during expansion and contraction of the slab, and unequal loading caused by unevenness of the sub-grade.

The world's most widely used reinforcement for concrete, American Welded Wire Fabric, has proved—during years of practical use and in sample slabs tested to destruction—to be definitely superior to other types of reinforcement. American Welded Wire Fabric is easily handled, quickly laid, so it helps you reduce material cost and construction time.

U·S·S American Welded Wire Fabric is available in every locality from jobbers' and dealers' stocks—supplemented by prompt mill shipment to identified projects.

When you are planning any kind of concrete construction, our technical staff will be glad to supply complete data on specific designs and standard styles of fabric. Literature containing valuable information is also available. Write to our nearest sales office today, you incur no obligation.

AMERICAN STEEL & WIRE COMPANY,
GENERAL OFFICES: CLEVELAND, OHIO
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PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Every type of concrete construction needs

USS AMERICAN WELDED WIRE FABRIC *reinforcement*

UNITED STATES STEEL

(*Continued from page 194*)

Irving W. Rutherford, Architect and Engineer, 49 Garden St., Hartford, Conn.

AT THE COLLEGES

Yale Plans Addition to Art Gallery Building

Philip L. Goodwin, Architect, has drawn plans for a new three-story wing to occupy half a city block as an addition to Yale University's present Art Gallery building.

Disclosure of Yale's intention at an undisclosed time in the future to extend the Art Gallery was made in an article in the Yale Alumni Magazine.

The new wing, which is expected to cost about $2 million, will be built on a site now occupied by classrooms of the School of Fine Arts and some commercial firms. All the land is owned by Yale, and about half the necessary funds for the construction already have been raised.

The exterior of the wing will be of brick and will blend in design with Jonathan Edwards College, adjacent to the School of Fine Arts, and the present Art Gallery building.

The new wing will triple facilities for art collections, special exhibitions, teaching studios and shop space.

Columbia Arts Center Planning Group Forms

A committee representing several fields of art and headed by Richard Rodgers, composer and producer, has been formed to develop plans for a new Arts Center at Columbia University, Dean Leopold Arnaud of the School of Architecture has announced.

The committee is composed of Eli Jacques Kahn, architect, who will direct activities in his area; Henry Allen Moe, director of the John Simon Guggenheim Memorial Foundation, who will head development of plans in painting and sculpture; Alfred de Liagre, Jr., producer, who will lead the work in the theater field; and Lawrence Tibbett, concert and opera star, whose field will be music.

Working with this group will be a Columbia faculty committee comprising Dean Arnaud in architecture and Professors Peppino Mangravite, painting and sculpture; Oscar James Campbell, theater; and Douglas Moore, music.

The Arts Center, envisioned as a great gathering place for students and practitioners of the creative arts, is expected when completed to house three schools of Columbia University — Architecture, Painting and Sculpture, and Dramatic Arts. It will house also the Department of Music and probably the Department of Fine Arts and Archaeology. It will include a small theater for workshop purposes, a large theater, an exhibition gallery and the libraries of the schools it contains.

A tentative location has been selected on the Morningside Heights campus on the east side of Amsterdam Avenue, between 116th and 117th streets.

Germans at North Carolina For City Planning Courses

Twelve German city planning trainees have arrived at the University of North Carolina for a four-month course under the direction of the Department of City and Regional Planning.

(*Continued on page 198*)

NUTONE'S VENTILATING FANS GIVE . . .
Greater Air Delivery
AT LOWEST COST!

EASIEST TO CLEAN Housewives love the removable center grille. (U. S. Patents pending.)
GUARANTEED Motor unconditionally guaranteed for five years. (9" and 10" Models) 6" Model—1 year guarantee.
EASIEST TO INSTALL A screw driver is the only tool required for low cost installation.

Model NCF-10

NUTONE
TRADE MARK

Model NF-10

U. S. Design and Mechanical Patents Pending

By actual wind tunnel test, NuTone Ventilators deliver more C.F.M. than competitive models in same price bracket. Send for complete specifications, A.I.A. FILE NO. 30-D-1; 31-H-5. NUTONE, INC., Dept. AR-5, Cincinnati 27, Ohio.

NON-CORROSIVE Bright chrome finish grille and baked enamel inside and out.
SILENT POWER Engineered for quiet, effective operation.
MODERN STYLING Designed for perfect blending with any interior.

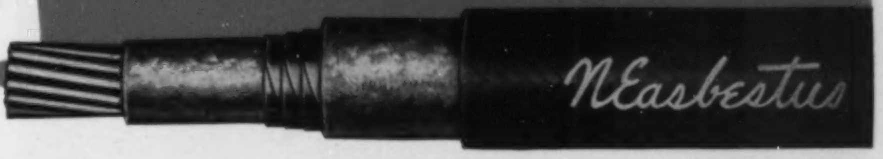
Electric Door Chimes
Low Voltage-Transformers
Electric House Numbers
4312
Luminous Pushbuttons

HERE'S THE WIRE FOR EVERY HOT SPOT LOCATION

NATIONAL ELECTRIC...

NEasbestus Wire & Cable

TWO TYPES
TO MEET ANY
"HOT SPOT" NEED



ASBESTOS-VARNISHED CAMBRIC—Recommended for conduit, raceway or open wiring in boiler rooms, steel mills, power plants, steam tunnels and factories where heat, moisture, corrosive fumes, oil and fire hazards are present.

Sizes 18 AWG to 1,000 MCM. 600-volt to 8000-volt ratings. Maximum operating temperatures up to 110° C. (230° F.) for 600-volt wire; up to 100° C. (212° F.) for 5000-volt wire.

NEasbestus

ALL-ASBESTOS—Recommended for motor connections, crane and engine compartment wiring, electric furnace leads and other open wired, high temperature installations in dry locations.

Sizes 18 AWG to 1,000 MCM. 300-volt and 600-volt ratings. Maximum operating temperatures up to 200° C. (392° F.) for 300-volt wire and 125° C. (257° F.) for 600-volt wire.

"NEasbestus"
WIRE
FOR HOT SPOTS
ASBESTOS INSULATED
National Electric Products Corporation

Resists HEAT . . . MOISTURE . . . OIL . . . GREASE . . . FUMES

Write for your copy of the new catalog "*NEasbestus Wire for Hot Spots.*" It will give you detailed information on sizes, ratings and recommended uses.

NATIONAL ELECTRIC PRODUCTS
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WIRING 6 SYSTEMS
WIRES AND CABLES

National Electric
PRODUCTS CORPORATION
1327 CHAMBER OF COMMERCE BLDG., PITTSBURGH 19, PA.

Architects Are Saying: PERMACLAD

. . . Brings New Beauty to Buildings

. . . Opens New Opportunities For Architectural Design

PERMACLAD
STAINLESS CLAD STEEL

Corrosion Resistant!
Easily Formed or Deep Drawn!
Low in Cost—High in Appeal

Architects, Designers and Builders who want glistening beauty and corrosion resistance at lower cost, specify Permaclad, Stainless Clad Steel. They know that with Permaclad you can design truly modern building facades, doorways, panels, interiors and shower stalls that look expensive, yet actually are comparatively low in cost. Best of all, with Permaclad they're good for the life of the building.

Reason: Permaclad (an entirely new and different product) combines the surface characteristics of Stainless Clad Steel with the easy forming qualities of mild steel. The stainless layer is usually 10% or 20% of the total thickness of the sheet but the percentage of cladding can be increased or decreased if required. It can be polished to a mirror-bright finish, it's easily formed or deep drawn, it's truly corrosion resistant and it's low in cost.

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Other Products: A.W. ALGRIP ABRASIVE Floor Plate • A.W. SUPER-DIAMOND Floor Plate
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(*Continued from page 196*)

The training is part of the U.S. State Department's reorientation program, under which selected specialists in various fields are brought to the United States to observe how their chosen fields function in a democracy.

The visiting trainees, all between the ages of 26 and 40 and all college graduates, come from Munich, Stuttgart, Karlsruhe and Frankfort. During their stay at Chapel Hill, the Germans are receiving orientation in American government before entering one quarter's work of courses in City Planning.

At the end of the Spring quarter, the trainees will tour the Tennessee Valley Authority and other centers of planning activity throughout the country.

Foundry Group Establishes $5000 Scholarship Fund

Ohio State University has received a gift of $5000 from the Foundry Educational Foundation to be used for scholarships for upper class engineering students who plan to enter the foundry industry.

Prof. Paul N. Lehoczky, chairman of the department of industrial engineering in which foundry training is given, has revealed that the grant will provide 17 students next year with scholarships of about $300 each. It is expected that the same amount of money will be made available by the Foundation for several years to come.

The Foundry Educational Foundation is a national body originated through the efforts of Ohio foundrymen and supported by voluntary contributions of foundries and allied industries. Scholarships similar to those at Ohio State have been established by the Foundation at 11 colleges of engineering in the United States.

Kent State University Host To Architectural Symposium

John Shear, head of the Department of Architecture at Carnegie Institute of Technology, and Dr. Serge Chermayeff, president of the Institute of Design, Illinois Institute of Technology, were among the speakers at an architectural symposium held May 3 at Kent State University, Kent, Ohio.

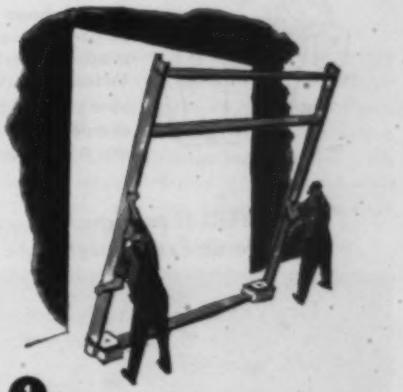
The symposium, in which practicing architects also participated, was arranged as part of the university's effort

(*Continued on page 200*)

How simple can it get? . . . the answer is in

"The doorway that has everything!"

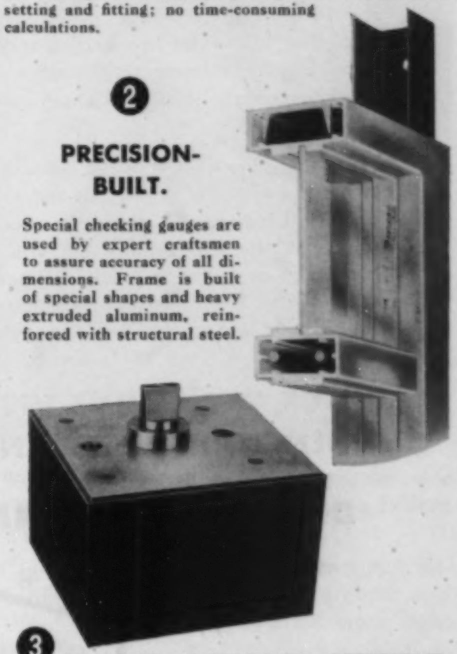
ARCHITECTS AND BUILDERS agree that, in its simplicity of installation, freedom from time-consuming calculations, and savings in setting, fitting and assembly labor, the new Pittsburgh Doorway leaves nothing to be desired. In fact, all you do is specify the style number and size of frame you need for the particular job (twelve standard, and four *free-standing*, designs are available to fill almost any requirement). It comes to you as a complete "package"—including moldings for transom glass, supports for sidelights, strikes for locks, sockets for bolts, Pittco Checking Floor Hinge. You just unpack the frame, bolt it into the building opening and hang the Herculite Doors, for whose massive strength the frames have been especially engineered. Why not send for complete details on Pittsburgh Doorways? The coupon below will bring them to you.



❶ ALL SET!

Factory-built frame reaches job in one "package," ready for bolting into building opening. No worries about setting and fitting; no time-consuming calculations.

Architect:
Horace Coy,
Toledo, Ohio.



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What causes putty to crack and peel?

. . . perhaps you have wondered why glazing can often cause trouble even when you have carefully specified the proper materials . . . It may check, crack or peel soon after installation. Well, here is our answer taken from our 82 years of experience in the manufacture of putty and compounds . . . experience borne out in extensive tests in the Dicks-Pontius testing laboratory.

ANSWER: If putty checks, cracks or peels there may be one or several causes. Many possible causes ought to be checked.

First, of course, the job requirements should be checked again to be sure the original specification is correct and to be sure that any extreme conditions have been taken into consideration.

Second, the sash should be checked for dirt or excessive moisture conditions. Clips should have been properly installed. Thinners should have been avoided and the putty mixed with *all* the oil that may have separated in the drum. Sash should have been free from jarring and excessive handling until putty had set. Conditions of extreme condensation and moisture during below freezing weather especially should have been avoided.

Third, whether metal or wood, the sash should be painted after proper glazing to prevent excessive drying out and to avoid cracking or peeling. Unprimed wood sash naturally should take special primeless grade putty to prevent trouble. While putty forms a natural film which protects against the elements, it takes paint to seal properly. We recommend painting after putty has set about 14 days. Paint should be brought above the putty line to provide proper seal. If putty is properly mixed and applied it will give years of service.

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(*Continued from page 198*)

to integrate its growing program in architecture with the other arts and sciences in the curriculum and to offer greater service to the profession of architecture in its area.

In his discussion at a stimulating morning session, Dr. Chermayeff discussed the influence of the industrial process on the form and function of human shelter; the present-day lack of design standards relative to the form of the objects we produce; the wide division between "art" and "function" in the visual field about us; and efforts to solve these divisions.

Reviewing the current form of architectural training at Carnegie Tech, Mr. Shear stressed the importance of the eight-week projects conducted by combining the several instructors in various allied fields into a team so that students benefit from lectures and criticism covering all facets of the subject under study. William B. Huff, architect, of Akron, chairman of the afternoon session, introduced Mr. Shear.

J. Byers Hays, Cleveland architect, urged the need for fuller acceptance by practicing architects of community responsibility, especially in the area of city planning. His talk included a description of the architect's role in this country over the past half century.

The responsibilities carried by the architect in a major industrial design and building firm were outlined by Chief Engineer R. F. Graef of the H. K. Ferguson Co. of Cleveland, who discussed salient differences in procedures desirable for private architectural offices and firms like his own.

Architect Robert A. Little of Cleveland, in the major talk of the evening session, emphasized the need for close collaboration between client and architect.

A review of current work in architecture at Kent State University was on display, along with two collaborative design problems.

Gift Provides Murals for Harvard Graduate Commons

Three mural designs for Harvard's new Graduate Commons will be done by Jean Miro, Herbert Bayer and Hans Arp, thanks to an anonymous gift. The Commons is part of the new graduate dormitory center designed by The Architects Collaborative.

(*Continued on page 204*)

IMPORTANT CONSIDERATIONS

for the Architect about to recommend A SCHOOL TIME AND PROGRAM SYSTEM

FIRST, let's define the function:

A School Time and Program System has two primary functions: (1) to give the correct time in each classroom, and (2) to sound signals at pre-determined intervals. It must work automatically 5 days a week (often longer), in buildings jam-packed with kids and staffed by teachers and a principal who have neither the time nor the inclination to fuss with complicated gadgets.

SECOND, let's examine the features:

The installation consists of a Master Clock — Program Controller with Secondary Clocks and Buzzers in classrooms (bells elsewhere). In order to function smoothly the system should have these advantages:

1 Master Clock-Program Controller must be "on time" together at all times. In the STANDARD System they are one and the same mechanism, geared together. They can never get "out of step."

2 Master Clock and Secondary Clocks must also reveal exactly the same time.

In the STANDARD System there is only one synchronous motor — a heavy-duty, slow speed, precision-built unit located in the Master Clock. Secondary Clocks have no motors, electrical contacts, tubes or other complicated parts — require no cleaning, oiling, adjustment or renewal.

Other synchronous systems have one or two motors in each secondary clock and 1, 2 or 3 motors in the control unit where the failure of one disarranges the entire system.

3 The Master Clock-Program Controller should keep running during current interruptions, so that when current is resumed the signals will sound on time.

In STANDARD Systems this is accomplished without a catching-up-to-time period — and without the use of batteries which require frequent attention or renewal.

4 Each Secondary Clock should reset itself automatically after current failure.

In STANDARD Systems each clock has a 25-minute corrective range (slow or fast) and the reset feature functions in two seconds, silently. In certain other systems the Secondary Clocks must be reset in groups.

5 The Program Controller should cover all the programming needs of the entire school. This means complete service with periods down to the minute, and silence during nights, weekends, etc.

Furthermore, it must be so simple that anyone can set up a program in a few minutes, and change schedules at a moment's notice.

STANDARD employs a special paper tape, marked in minutes and hours, and punched by the Principal according to the schedule desired. Spare tapes, with different schedules, can be installed in a few seconds when necessary. The tapes will last 15 years or longer, and are free.

Other systems employing lugs, pins, cams, etc., are not only difficult to set up, but are subject to failure when pins drop out or break off.

6 For best performance and long-range economy, engineers agree that the wiring system for a clock and program service should be kept separate from light and power lines.

7 The system should be backed by years of dependable operation in schools under all conditions.

STANDARD can produce ample evidence of dependable performance in case histories running back to the turn of the century.

We shall be pleased to send you our new Bulletin No. 178, and to provide you with names of satisfied users to whom you may refer. Perhaps we can also assist you in preparing specifications for your time and program system. Please get in touch with us.

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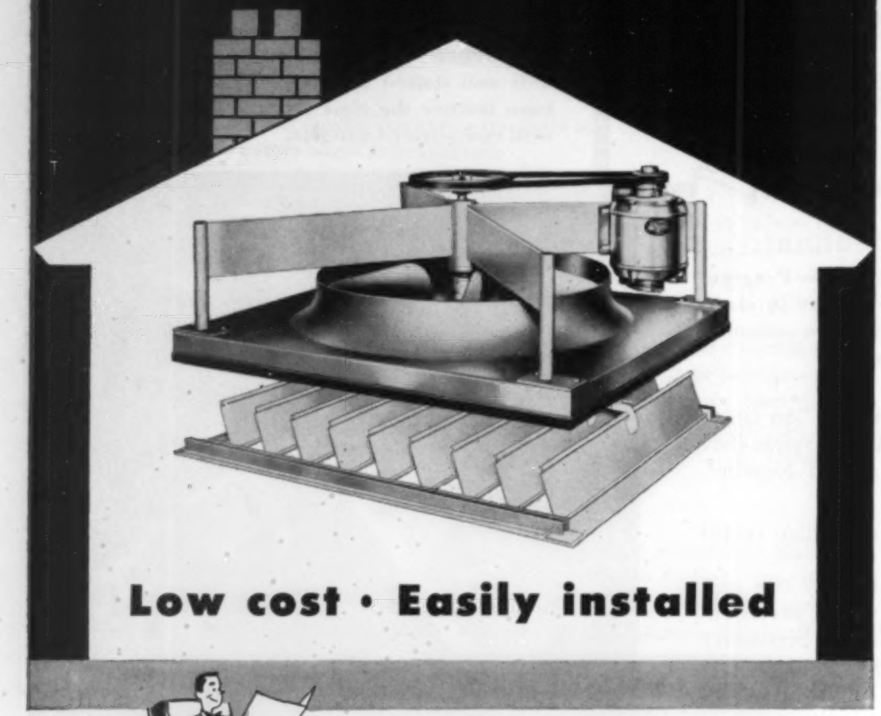

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(Continued from page 200)

Design Presentation Is Reenacted for Students

Columbia University student associate members of the New York Chapter of the American Institute of Architects had a chance recently to learn something about a very practical aspect of architectural practice.

Gannett Herwig, associate member of the firm of Alfred Hopkins & Associates, reenacted the presentation to a client of an actual design recently completed by his firm.

The program was designed to show the students what is involved in presenting and describing a project to the layman, and how to explain the architect's philosophy in his approach to a design problem.

The meeting was the first of a proposed series of meetings, forums and discussions.

Student associate membership in the New York Chapter is an innovation intended to help the student toward proper orientation into the practical side of the profession. Membership is open to any student of architecture studying or living, or working part-time, in New York City, who has completed one year of architectural school.

Patent Classification Index Is Completed at Ohio State

Completion of a new Patent Classification Index in the A. F. Davis Welding Library has been announced by the Department of Welding Engineering at Ohio State University.

The index is designed to make information on more than 12,000 U. S. patents on welding more easily available. Each patent in the library is classified or indexed in several different ways — by process, material product, use, inventor's name, date of issue, etc., on a single keysort card. These cards are sorted mechanically, and in very little time the numbers of patents pertaining to a given field may be determined.

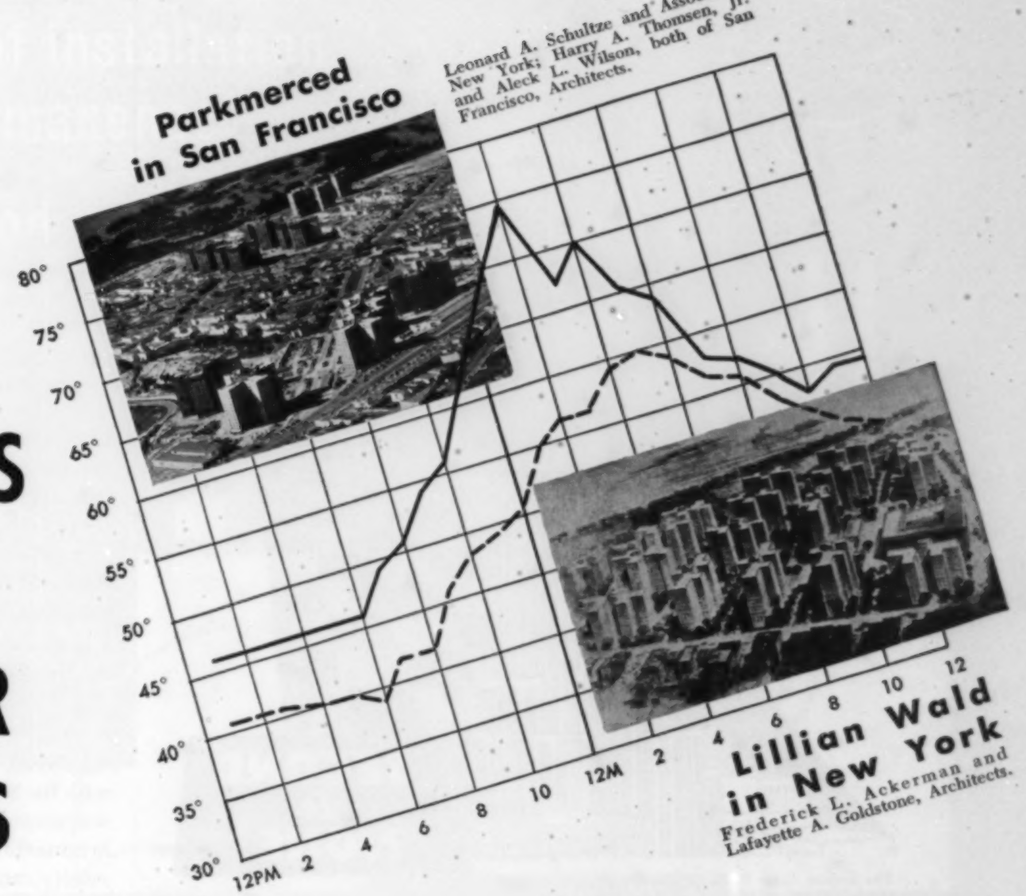
Services are free of charge to those who make use of the index system in person, but modest charges to defray clerical expense will be made for inquiries handled by mail.

Special Courses

- A teacher training seminar in design will be held at the summer session of the

(Continued on page 206)

TWO CLIMATES ...TWO WEBSTER SYSTEMS



In San Francisco: "Short-Hour" Heating with Steam

Pictured at left is Parkmerced, the great housing development of Metropolitan Life Insurance Company. Shown graphically is a San Francisco winter day with temperature below 70° in the morning and evening and above 70° at midday.

In designing a Webster Vacuum Steam Heating System for Parkmerced, Consulting Engineer Thomas B. Hunter knew from experience that San Francisco buildings are best served and most economically served by what is known as "short hour" heating, with steam either full on or off entirely.

Knowing too that this type of operation demands the best in radiator valves and traps and vacuum pumps, Engineer Hunter approved the selection of Webster Sylphon Packless Valves, Webster Sylphon Traps and Nash Vacuum Pumps.

In New York City: Continuous Heating with Steam

Pictured at right is Lillian Wald Houses of the New York City Housing Authority in downtown Manhattan. It is one of eight projects of this Authority, all equipped with Webster Moderator Systems furnished under a uniform specification which is the result of long study by the Authority and its numerous consulting engineers.*

Look at the temperatures for this New York winter day. Heat is needed all day with the amount of heat varying from 44% of maximum down to 14%. What is necessary—and provided by the "controlled-by-the-Weather" Webster Moderator System—is continuous heating with variation in the rate of heating to meet the changing demand.

*LILLIAN WALD—Sullivan A. S. Patorno; WOODSIDE—Meyer, Strong & Jones; ALBANY—Fellheimer, Wagner & Vollmer, Architects and Engineers; SOUTH BEACH—V. L. Folotico Associates; TODT HILL—E. V. Marquis; BRONX RIVER—Sullivan A. S. Patorno; DYCKMAN—Sullivan A. S. Patorno; FARRAGUT—Paul Wunderlich.

Whether it is a Webster Vacuum System for San Francisco or a Webster Moderator System for New York, each room occupant can make a positive heat shut-off with a Webster Radiator Valve—a prime necessity in large, multiple-unit housing.

Wherever you are—whatever your climate and heating requirements—there is a Webster System to fit your needs, and you are almost sure to find a long-resident Consulting Engineer in your community who knows your climatic requirements and knows from experience how well Webster equipment can serve you.

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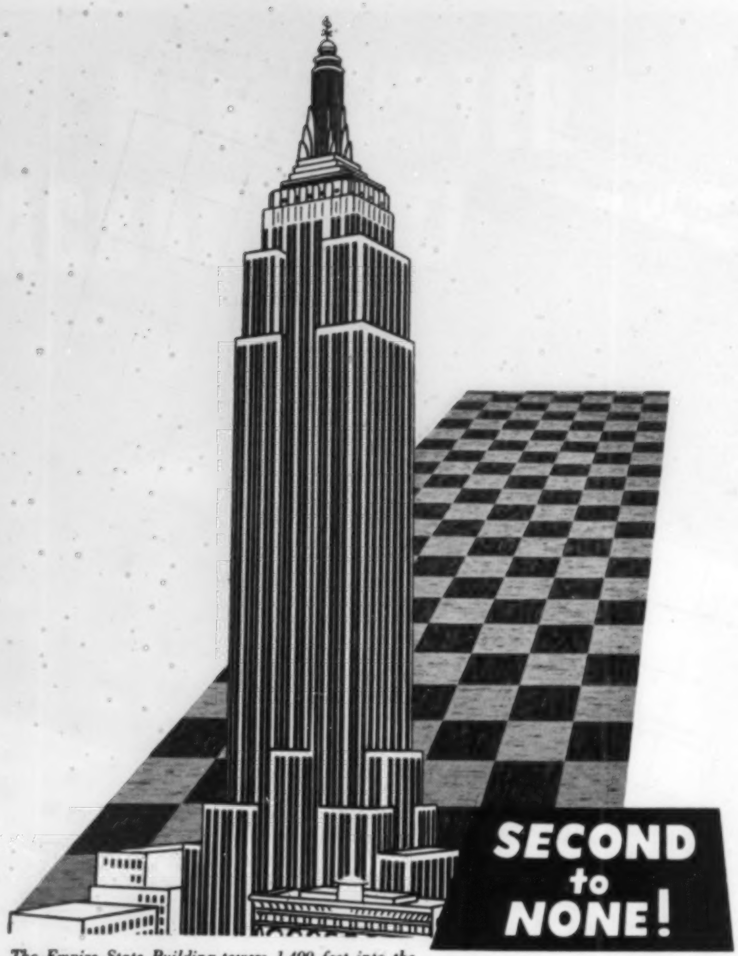
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The Empire State Building towers 1,499 feet into the sky with 3,220 miles of telephone and telegraph wires. Elevators travel 1,000 feet per minute!

Just as the Empire State is "second to none" among buildings, so are Hood flooring products acclaimed among leading architects, designers and contractors. Because of this, flooring specifications for jobs of all types have read "Hood or equal" for more than 25 years.

And this reputation is well-earned. A glance below will show you the variety of products Hood offers . . . products that provide the answer for every flooring problem. When you specify any of these, you can be assured that the combination of Hood manufacturing skill and B. F. Goodrich's fame as "First in Rubber" means longer life, an unlimited variety of decorative patterns, comfort, quiet and vital economy through ease of maintenance . . . all essential qualities so important to your clients.

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Standard of quality in 23 beautiful colors.

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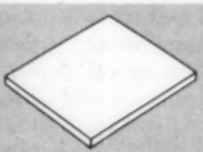
Jet black and 4 brilliant plain colors.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25 colors, for surface or below-grade areas.

"ARRAZIN" CARPET
Vinyl plastic carpeting, embossed broadloom effect surface, cellular rubber base.

*A NEW PRODUCT
Of vinyl resins — resilient — durable — grease resistant — colorful — for on and below-grade areas and suspended floors — now under sales development.
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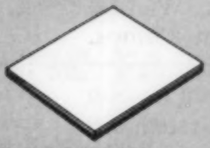
"AIR PATH" RUBBER TILE
In 8 colors, with cellular rubber back.

TWO GREAT NAMES B.F.Goodrich FLOORING DIVISION Hood Rubber Co. WATERTOWN, MASS. TWO GREAT TILES
RUBBER ASPHALT

THE RECORD REPORTS

(*Continued from page 204*)

Institute of Design of Illinois Institute of Technology June 26–August 4.

The summer curriculum will represent an intensified six-week study of the Institute of Design's Foundation Course, which may be applied at the high school and college level as preparation for advanced study of architecture, industrial design, advertising and display, photography and film, painting and sculpture.

The course is open to professional educators or prospective teachers who have college, technical or art school degrees and to artists and designers with degree or completion certificate from a recognized school.

Applications should be addressed to: Barbara Chermayeff, admission counselor, Bulletin of Illinois Institute of Technology, Institute of Design, 632 N. Dearborn St., Chicago 10, Ill.

• Lehigh University, in cooperation with the Society of Industrial Designers, will present the second Product Design Seminar June 26-July 21 on the university campus at Bethlehem, Pa.

Nationally known leaders in the field of product design will participate in the seminar, as will members of the Lehigh faculty.

The special purpose of the seminar is to analyze the problems of product design and to give the attending delegates a review of current solutions to each problem.

Plans for the seminar are being made by a committee which includes Harold Van Doren and Raymond Spilman of the Society of Industrial Designers; Philip McConnell, executive secretary of the Society of Industrial Designers; Thomas T. Holme, Robert F. Herrick and Einar M. Ramberg, all of Lehigh.

Applications should be addressed to: Mr. E. M. Ramburg, Product Design Seminar, Lehigh University, Bethlehem, Pa.

• The 12th annual Fall Conference on City and Regional Planning has been scheduled by the Department of City and Regional Planning at the Massachusetts Institute of Technology for September 5 through 15.

The conference, which will be held in morning and afternoon seminar sessions, will be open to qualified profes-

(*Continued on page 208*)

ease of installation
+ permanence
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Won't rot
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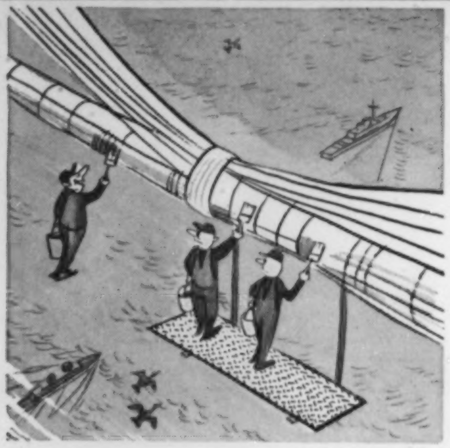

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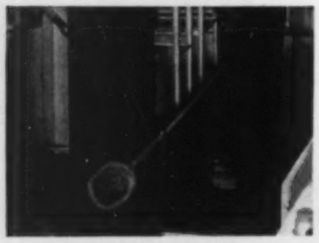
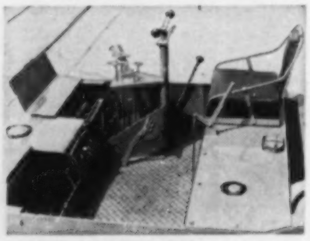


Firesafe



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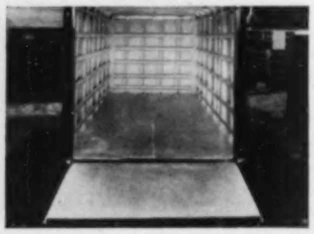

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(Continued from page 206)

sionals and others interested in the technical aspects of planning.

The curricula will include housing, zoning, the master plan, subdivision control, traffic, recreation and, with special emphasis, urban redevelopment, in reference to the Housing Act of 1949.

Frederick J. Adams will direct the conference, assisted by Flavel Shurtleff and other members of the M.I.T. staff. The registration fee will be $50, and accommodations can be arranged in M.I.T. dormitories.

Applications should be sent to Prof. Frederick J. Adams, Room 7-333, M.I.T., Cambridge 39, Mass.

Faculty Appointments

- Hugh R. Pomeroy, executive director of the Westchester County Planning Commission, has been appointed visiting lecturer in the Department of City and Regional Planning at the University of North Carolina for the Spring quarter, to conduct a seminar on city planning.

- Appointments to the staff of the School of Architectural and Allied Arts at the University of Oregon have been announced as follows: Wilbert P. Lei, visiting critic in architectural design; Stanley W. Bryan, assistant professor of architecture; Allen McNown, instructor in architecture; and Frederick H. Heidel and Richard Prasch, instructors in free hand drawing.

- Hans Schleger, internationally known artist and designer, has been named visiting associate professor in the Institute of Design of Illinois Institute of Technology, Director Serge Chermayeff has announced.

A fellow of the Society of Industrial Artists, Schleger has had wide experience as independent designer, art director and consultant for several English firms since completing his education in his native Germany.

- Konrad Wachsmann, 48, architect and designer, has been named professor in charge of advanced building research and design at the Institute of Design of Illinois Institute of Technology.

(Continued on page 210

Announcing...

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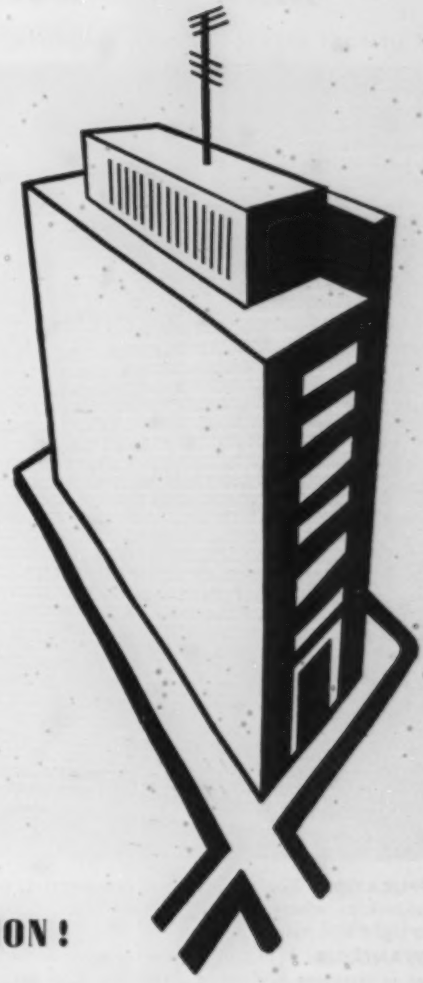
FOR APARTMENT HOUSES HOTELS AND HOSPITALS



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System provides clear, noise-free reception on all channels.

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PERFECT RECEPTION WITHOUT EXCEPTION!

A perfect picture on every set, in every room, in any TV area! For complete facts, write, phone or wire:

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THE RECORD REPORTS

(*Continued from page 208*)

ELECTIONS, APPOINTMENTS

• C. M. Baker has been named chief engineer of the Kalamazoo, Mich., works of Ingersoll Steel Division, Borg-Warner, Inc., succeeding L. C. Freeman, who recently reached retirement age.

• Paul F. Bronckhurst, formerly West Coast representative of leading engineering and construction companies, has joined the staff of Kaiser Engineers.

• Appointment of Richard A. Biggs as director of architectural development for Crucible Steel Co. of America has been announced. A former development engineer for Pittsburgh Corning Corp., Mr. Biggs has a degree in electrical engineering from Harvard and is a member of the American Society of Heating and Ventilating Engineers.

• The Chicago Land Clearance Commission has announced the appointments of Herman Berkman as chief of research; Robert Lillibridge as chief land planner; and Ray E. Murray as project engineer.

• Election of Lou R. Crandall, president of the George A. Fuller Co., as a member of the Board of Directors of the Commerce and Industry Association of New York, Inc., has been announced.

• Alfred E. Budell, president of the Industrial Engineering Co. of New York City, has been elected president of the Metropolitan Builders Association to succeed H. C. Turner Jr., president of the Turner Construction Company.

• Appointment of William F. Denne as district director of the Buffalo, N. Y., insuring office of the Federal Housing Administration has been announced by Commissioner Franklin D. Richards. He succeeds Alfred C. Gertis, who resigned to enter private business.

• James William Gaynor, director of management of the New York City Housing Authority for the past two years, has been named executive director. Other recent Housing Authority appointments include: Philip J. Cruise, formerly secretary, to be assistant to the chairman; Harold Klorfein, formerly assistant secretary, to secretary; and George R. Genung, formerly deputy director of management, to the post of director of management. John Shepard Parke, executive vice president of Presbyterian Hospital, has been reelected vice chairman of the Authority.

• Horace Gooch Jr. has been reelected president of the Society of the Plastics Industry, Inc. Mr. Gooch is a founder

(*Continued on page 212*)

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ABOUT THIS
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PRODUCT

APPLICATION: For all types of commercial, public and private buildings, schools and institutions where sections of buildings or areas are to be closed off without shutting out light and vision.

ADVANTAGES: MECCO proven quality of workmanship in new MECCO design grille that is stronger and more attractive than usual types. New simplicity of design lowers maintenance. Guides may be concealed. Arranged for easy manual or hand chain or crank operation. Cylinder-type lock or padlock locking available. Write for complete details. Also made to specification.

"MECCO" doors

ALL TYPES ROLLING DOORS
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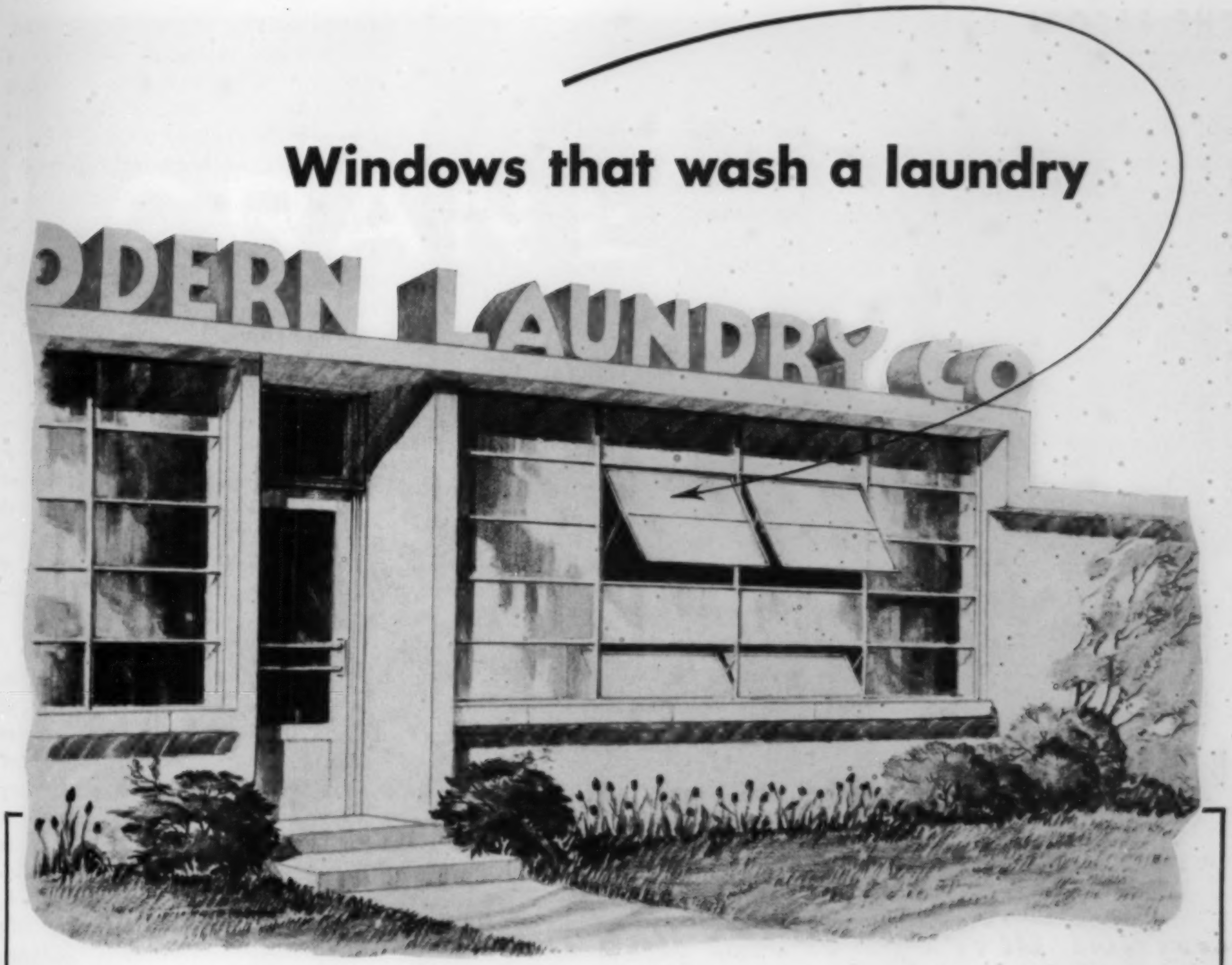
P. O. BOX 1115, CINCINNATI, OHIO

Windows that wash a laundry



• Suffocating steam and smell hang heavy in a laundry. You need a constant flow of clean fresh air to wash them away. So specify windows that can stay open—even in rainy weather. Fenestra* Projected Steel Windows.

Their open-out vents form canopies over the openings. Open-in vents deflect drafts upward.

And these rugged, good-looking windows can be quickly combined vertically or horizontally to form whole walls of fresh air. Whole walls of daylight.

You get Fenestra Windows for less because Fenestra produces more . . . installation costs less because their standard sizes co-ordinate with other wall materials. And Fenestra Steel Windows work smoothly year after year. They are precision-built by America's oldest and largest steel window manufacturer.

Check on the new Fenestra Commercial Projected, Pivoted and Security Windows. For plants, offices, labs, warehouses and commercial buildings. Call your Fenestra salesman (listed in your Yellow Phone Directory) see Sweet's Architectural File, Section 17b/7, or mail the coupon. *®

Fenestra

WINDOWS • DOORS • PANELS

They Cost Less Because We Produce More

DETROIT STEEL PRODUCTS CO.
Dept. AR-6, 2252 E. Grand Blvd.
Detroit 11, Michigan

Please send me information on types and sizes of new Fenestra Industrial Steel Windows.

Name______________________________

Company___________________________

Address____________________________

THE RECORD REPORTS

(*Continued from page 210*)

and treasurer of Worcester Moulded Plastics Co. Other officers elected were: George H. Clark, vice president, The Formica Co., chairman of the board; Spencer E. Palmer, assistant vice president, Tennessee Eastman Corp., vice president; J. E. Gould, vice president, Detroit Macoid Corp., secretary-treasurer.

- Ralph G. Gulley has been named as architectural consultant and special assistant to the president, John D. Dale, of Durisol, Inc., manufacturer of building materials. Mr. Gulley has been a practicing architect for 18 years and was formerly a partner of Donald Deskey Associates, New York industrial design consultants.

- The firm of Holabird & Root & Burgee has been named as architects and engineers for the Chicago Fair of 1950. The national exposition on Chicago's lake shore will run from June 24 through Labor Day and will be designed to dramatize the achievements of science, agriculture, commerce and industry.

- Harry L. Murray of the Murray Engineering Co., Detroit, has been elected president of the National Association of Engineering Companies. Other officers for 1950 are: Walter W. Schmitt, Product Engineering Service, Inc., Detroit, vice president; and Walter R. Jackson, Modern Engineering Service Co., Berkeley, Mich., secretary-treasurer. Directors elected for three-year terms are: Albert F. Lehmann, Special Engineering Service, Inc., Detroit; William H. Bosserman, Bosserman-Pearce Engineering Co., Detroit, and Mr. Jackson.

- Members of the Executive Committee for 1950 of the National Association of Home Builders of the United States have been appointed by President Thomas P. Coogan as follows: Rodney Lockwood, immediate past president; Bill Atkinson, Oklahoma City; Alan Brockbank, Salt Lake City; Nate Manilow, Chicago; Joe Haverstick, Dayton, Ohio; Paul Burkhard, Glendale, Calif.; Frank Burns, Denver; George Goodyear, Charlotte, N. C.; Dick Hughes, Pampa, Tex.; B. A. Martin, Atlanta, Ga.; O. G. Powell, Des Moines, Ia.; Manny Spiegel, Passaic, N. J.

- W. Arthur Riehl, executive secretary of the Westchester Allied Trades Association, Inc., and a former War Production Board official, has been appointed secretary of the Building Trades Employers' Association of New York City. Mr. Riehl succeeds the late William G. Wheeler.

- Sam Tour, chairman of the Board of Sam Tour & Co., Inc. of New York City and president of the American Standards Testing Bureau, Inc., has been elected chairman of the Inter-Society Corrosion Committee of the National Association of Corrosion Engineers.

AWARDS

Harry L. Horning Memorial

T. A. Boyd, General Motors Research Laboratories consultant, has received the Harry L. Horning Memorial Award

(*Continued on page 214*)

REDWOOD

Architect: H. H. HARRIS, Los Angeles

...that always looks like new!

Architect: WILLIAM LESCAZE, New York

Architect: POMERANCE & BREIMES, New York

Cabot's California Redwood Stain brings out and maintains the attractive shade of new Redwood! It actually dyes the wood its own typical color . . . permanently prevents dullness and fading. Cabot's California Redwood Stain penetrates deeply . . . shows grain and texture to best advantage. A high content of pure creosote oil assures years of protection!

WRITE TODAY for actual sample of Redwood treated with Cabot's California Redwood Stain!

Samuel Cabot, Inc.
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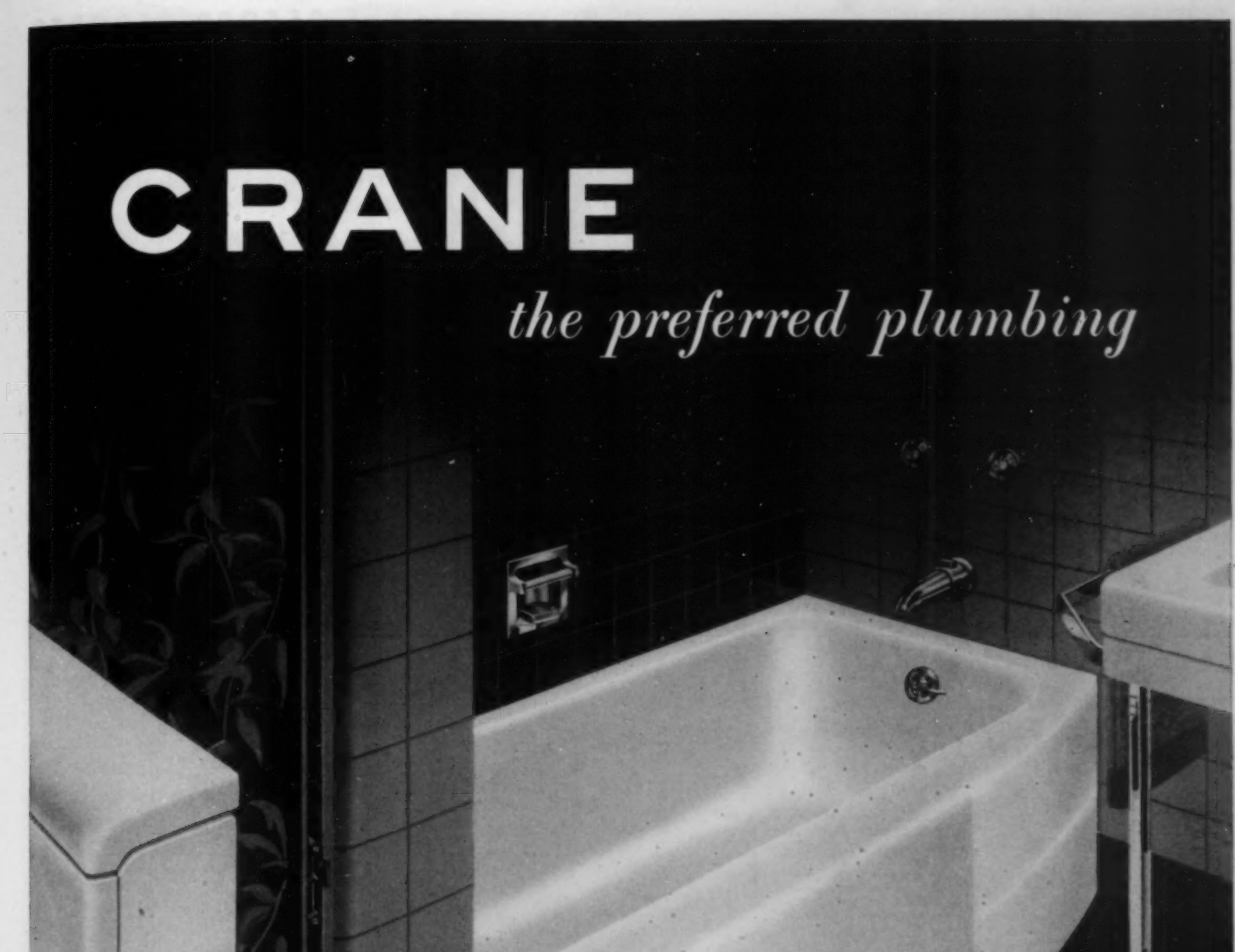
Boston 9, Mass.

CABOT'S CALIFORNIA REDWOOD STAIN

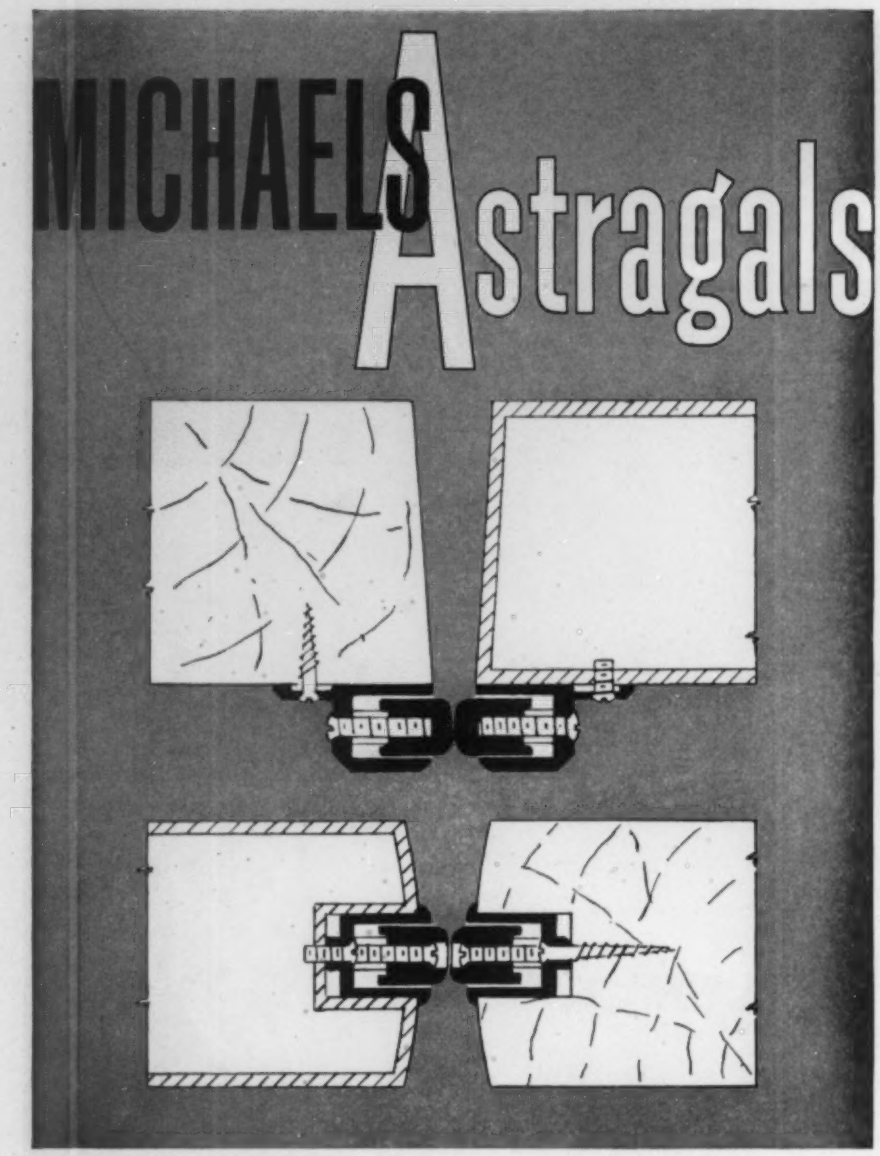


THE *CRITERION* BATH, in white and eight Crane colors. *Criterion* closet to match. Also *Diana* Lavatory for dressing table or leg mounting. Consult your Crane Branch or Crane Wholesaler.

CRANE

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO 5

PLUMBING AND HEATING • VALVES • FITTINGS • PIPE



Write today for information and prices on Michaels Adjustable Astragals. Made of extruded bronze, aluminum or nickel, they are simple, practical, rugged, easily installed and adjusted, and available in several styles. Two are shown above. Type A (top illustration) may be applied to either wood or hollow metal bevel doors. Also used as a stop bead. Type E (lower illustration) is for bullnose hollow metal or wood double doors. Both types may be used at the bottom of doors. Michaels Astragals help keep doors closed tightly . . . eliminate drafts and air currents . . . keep out dirt and dust. Write for details. Astragals are only one of many items in the Michaels line. So whatever building product you need, if it's made of metal, we may have it or can make it.

MICHAELS PRODUCTS

Bank Screens and Partitions
Welded Bronze Doors
Elevator Doors
Store Fronts
Lettering
Check Desks (standing and wall)
Lamp Standards
Marquises
Tablets and Signs
Name Plates

Astragals (adjustable)
Stair Railings (cast and wrought)
Wrought and Cast Radiator Grilles
Grilles and Wickets
Kick and Push Plates
Push Bars
Cast Thresholds
Extruded Thresholds
MI-CO Parking Meters
Museum Trophy Cases

The MICHAELS ARTS BRONZE CO., INC., 234 Scott St., Covington, Ky.

Member of the National Association of Ornamental Nonferrous Metals Manufacturers

(*Continued from page 212*)

from the Society of Automotive Engineers "in recognition of distinguished service in the field of mutual adaptation of fuels and engines."

The award honored Mr. Boyd's contributions during his 30-year study of fuels and engines, which is considered to have benefited not only motoring but the economy at large by pointing the way toward more efficient utilization of hydrocarbon fuels.

"Klixon Award" Established

A monetary award for technical articles on hermetically sealed refrigeration compressors published in *Refrigerating Engineering*, official publication of the American Society of Refrigerating Engineers, has been donated by the Spencer Thermostat Division of the Metals and Controls Corp., Attleboro, Mass.

To be known as the "Klixon Award," the $100 award will be made once every year for the next five years for the most outstanding paper on the electric system of hermetically sealed compressors. The award year will extend from September 1 to August 31, with the end of the first award year next August 31.

Presentation of the award will be at the ASRE annual meeting each December, and recipients will be selected by the ASRE Awards Committee.

James H. McGraw Award

The James H. McGraw Award in Technical Institute Education will be presented for the first time at the Seattle meeting of the American Society for Engineering Education in June on the University of Washington campus.

The award which will consist of an annual prize of $500 in cash and an appropriately engraved certificate, is sponsored by the McGraw-Hill Book Co. in memory of James H. McGraw Sr., the company's founder, for the purpose of "recognizing and encouraging outstanding contributions to technical institute education in the United States."

Further information is available from Secretary A. B. Bronwell, Northwestern University, Evanston, Ill., of A. S. E. E.

Le Brun Scholarship Goes To Kansas City Architect

Architect Ralph E. Myers of Kansas City has won the 1950 Le Brun Travel-

(*Continued on page 216*)

Play-room for grown-ups...

Fixtures courtesy of American Radiator & Standard Sanitary Corp., Pittsburgh, Pa.
Patterns: 703 Coal Frost, 302 Meadow Green

... after a hard day, they relax on

FREMONT RUBBER TILE

Before you start that den idea, don't overlook your client's after-dinner comfort. Fremont Rubber Tile not only adds sound absorption, safer, softer walking, easier cleaning and greater durability but its 17 fade-resistant colors will go with any color scheme. Next job, plan Fremont Rubber Tile first. It's better all ways.

Fremont Rubber Company

309 McPherson Highway, FREMONT, OHIO

MAKERS OF: Rubber Tile • Rubber Tile Adhesive • Vinyl Plastic Cove Base • Rubber Rugs • Sponge Rubber Rug Cushion Plastics • Foam Rubber

Please send me without obligation a copy of your full-color brochure, "Fremont Opens the Door".

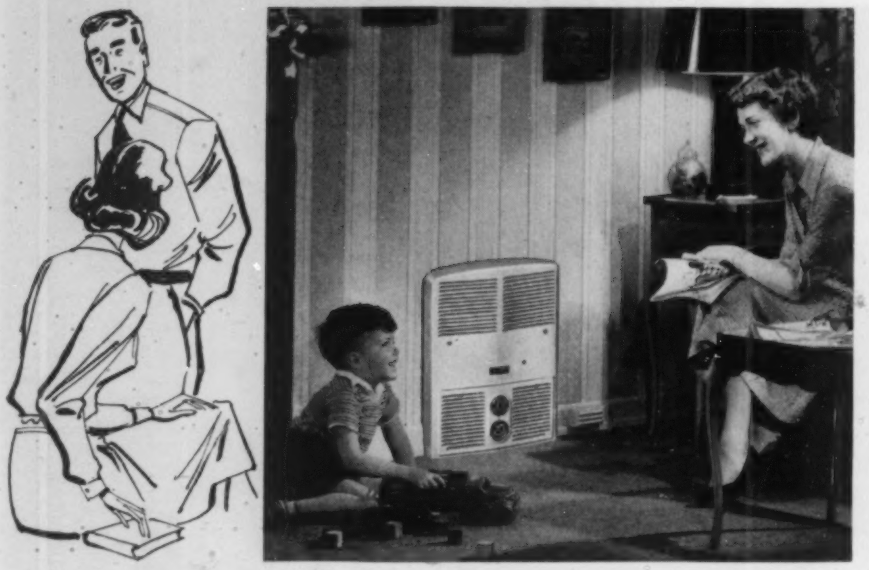
Name____________________

Firm Name____________________

Street Address____________________

City____________ State____________

New "Safety-Sealed" Gas-Heating Unit needs NO chimney, NO ducts NO electricity!



Brings *zone-controlled* heat to a single room, suite of rooms or an entire building!

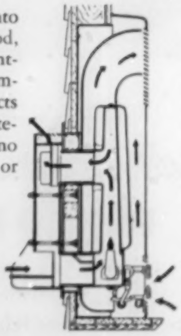
As a main or auxiliary source of heat, this new Stewart-Warner "Safety-Sealed" unit brings positive safety and *zone-controlled* comfort to homes, cottages, cabins and motels. Each Saf-Aire unit is a completely automatic, independent gas heating system that wastes no basement, closet or floor space!

Exclusive "Safety-Sealed" construction positively seals all combustion products from contact with the heated room air. Only *outside* air is used for combustion, drawn in through the exterior wall vent, then vented outside immediately.

Saf-Aire also provides the perfect answer for hard-to-heat rooms, attics, glassed-in porches and remote wing areas. Available with manual or thermostat control, this versatile unit operates with absolute silence on natural, manufactured or LP gas.

WRITE NOW for complete model specifications and performance data on Saf-Aire and other models in the complete Stewart-Warner line of "Safety-Sealed" gas heating equipment.

SAF-AIRE fits easily into any exterior wall of wood, brick, stucco or cement-block construction. Combustion chamber connects directly to the small exterior wall vent. Needs no costly chimney, ducts or electricity to operate!



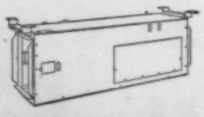
Model 991-14
14,000 BTU/HR
18" x 24" x 4"

Model 992-20
20,000 BTU/HR
18" x 38½" x 4"

These Stewart-Warner Heaters are "Safety-Sealed," too!

South Wind Zone Heating System

Installed in any inside or outside wall. Single or double grille units. Two forced-air units heat the average home. Automatically modulated flow of heat. Thermostat control.



South Wind Zone Furnace

Compact, forced-air unit. Easily tucked away under the floor, in a closet or any convenient space. Short ducts from centralized installation. Thermostatic heat control.

STEWART *Safety Sealed* **WARNER**
DOMESTIC HEATING

Approved by American Gas Association

STEWART-WARNER CORPORATION
South Wind Division • 1520 Drover Street • Indianapolis 7, Indiana

THE RECORD REPORTS

(*Continued from page 214*)

ing Scholarship of the New York Chapter of the American Institute of Architects.

Chairman Robert Carson of the scholarship committee announced the selection of Mr. Myers for his skillful handling of the design elements in a suburban railroad station.

The winning entry in the nationwide competition provided parking space for 800 automobiles and access to the tracks for peak loads of commuters.

Mr. Myers, a member of the firm of Kivett & Myers of Kansas City, studied at the Art Institute and the University of Illinois and has been a professor at the Finlay Engineering College.

The award provides $2800 for six months' study and travel in Europe.

Edmund A. Prentis Receives Columbia Engineering Award

The Egleston Medal, awarded annually by the Alumni Association of Columbia University's School of Engineering for distinguished service in engineering, was presented this year to Edmund A. Prentis, partner in the New York firm of Spencer, White and Prentis.

The award was established in honor of Thomas Egleston, founder of the School of Mines from which the Engineering School developed. First presented in 1939, the award has previously gone to H. E. Dougherty, Dean James K. Finch, Philip Sporn, A. Chester Beatty and Harvey S. Mudd. George A. Wilkens was chairman of the 1950 award committee.

Mr. Prentis, a 1906 graduate of the school, has been active in many underground construction projects, including subway construction in New York.

Erratum

The Sidney L. Strauss Memorial Award has been established by the New York Society of Architects to honor its late past president. Each constituent society or chapter of the New York State Association of Architects will be invited each year to nominate for the award an architect or other person for his services during the preceding year to the profession of architecture. The Record regrets having incorrectly stated in an announcement in the April issue that the award had been established by the New York State Association of Architects.

in variety of types and styles

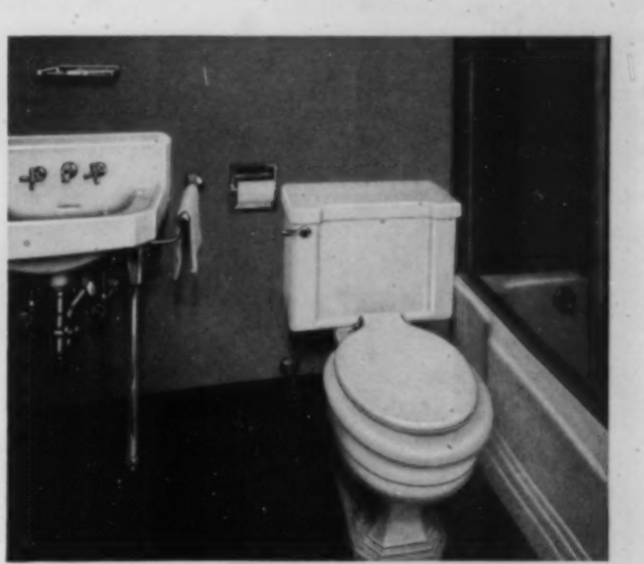
line is unsurpassed!

WHETHER you're designing houses, hospitals, hotels, schools or large industrial buildings, the *complete* American-Standard line offers the widest choice of styles, types, models and sizes of heating equipment and plumbing fixtures for your needs.

And American-Standard *quality* is second to none. The sound construction details of American-Standard products meet the most exacting requirements. Their good looks, efficient design, flawless performance and operating economy will win the admiration of your clients.

No line of heating equipment and plumbing fixtures is better known or better accepted than American-Standard. For this reason, when you specify American-Standard products in your plans, you are assuring yourself of satisfied clients. Ask your Heating and Plumbing Contractor for information about the complete American-Standard line. He'll gladly help you select the products best suited to your needs. **American Radiator & Standard Sanitary Corporation,** P. O. Box 1226, Pittsburgh 30, Pennsylvania.

LOOK FOR THIS MARK OF MERIT



CONVENIENCE AND BEAUTY are combined in this bathroom of the Beverly-Carlton Hotel, Beverly Hills, California. The durable Master Pembroke Bath has low sides, wide bottom, for convenience and safety. Made of rigid cast iron with a thick coating of regular or acid-resisting enamel. The smart Marledge Lavatory has a deep, square bowl, splash back and non-tarnishing Chromard fittings. The genuine vitreous china Compact Water Closet features syphon vortex water action for thorough, quiet flushing.

JUST THE RIGHT HEIGHT . . . for students of all sizes. These handsome wall-supported Neo-Toric Drinking Fountains in the Rosedale School of Austin, Texas, are arranged so that even the smallest tots can easily reach them. They're made of permanently non-absorbent genuine vitreous china and feature angle stream bubbler with automatic volume regulator and metal guard that permits escape of water and prevents squirting.

A DEPENDABLE SUPPLY OF HOT WATER is furnished the Guest Ranch Motor Hotel of Cheyenne, Wyoming, by this Empire Gas Boiler. A good-looking boiler like this adds to the appearance of any building . . . the colorful jacket harmonizes with modern decorative schemes. And the Empire has all the features essential to perfect performance, including patented pin type cast iron sections, joined with gas-tight, metal-to-metal fit to assure maximum combustion efficiency.

AMERICAN-Standard

First in heating . . . first in plumbing

Serving home and industry

AMERICAN-STANDARD · AMERICAN BLOWER · CHURCH SEATS · DETROIT LUBRICATOR · KEWANEE BOILERS · ROSS HEATER · TONAWANDA IRON

Building Up $7.5 Million For March, MacLean Shows

Construction in March 1950 showed a healthy gain of $7.5 million over March a year ago, according to MacLean Building Reports Ltd.

Total volume for March 1950 was set at more than $75 million, with residential construction showing the principal increase.

CANADA *(Continued from page 16)*

Quebec registered a decline in the industrial category, but this was partly balanced by higher activity in Ontario and Alberta. Engineering was low across the country.

Comparative March figures for the four classifications follow:

Residential — 1950, $30,168,300; 1949, $19,896,900.

Commercial — 1950, $25,709,500; 1949, $20,820,900.

Industrial — 1950, $13,251,600; 1949, $17,115,200.

Engineering — 1950, $5,984,600; 1949, $9,755,300.

Biggest Building Year Foreseen by Canadians

Minister of Trade & Commerce C. D. Howe predicted at a recent session of Parliament that 1950 would be Canada's greatest building year.

Mr. Howe foresees public investment climbing $4 million over the 1949 high to a record level of $3,600,000,000.

Experts of the Central Mortgage & Housing Corp. feel 1949's record of 91,000 units completed may be overshot this year by 5000 to 8000 units. Such a pace could mean that house building would be up $75 million over last year.

The boom in house building and construction generally is obvious in reports from coast to coast. Montreal has two housing projects of $1.8 million and $1.3 million respectively, and Dominion Textile Co. has started a 10-story structure to cost about $1.7 million. In Toronto, Bell Telephone is planning a $4 million office building; and Manufacturers Life, Confederation Life and Crown Life are putting up new offices.

In Ottawa, National Research Council is to have a new building, and plans call also for a 8- and 10-story Department of Veterans Affairs Building. Windsor has a $2 million plant extension; and an $8 million refinery is on the books for Edmonton.

'49 Housing Starts in U.S., Canada Compared

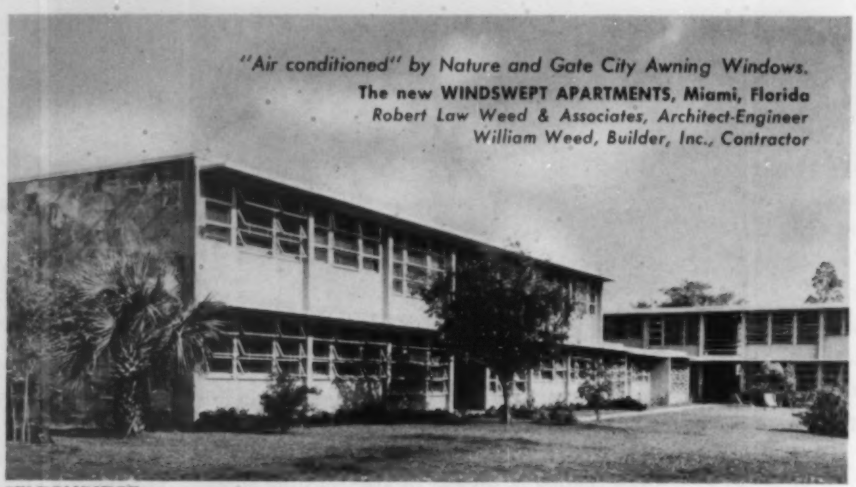
An interesting comparison of house-building activity in the United States and Canada can be made from 1949 government statistics released recently in the two countries.

The United States, setting an all-time record, had 1,019,000 starts for 67.4 per 10,000 of population (estimated at 151,000,000). Canada's 1949 total of 89,509, down slightly from 1948, produced a ratio of 63.9 starts per 10,000 of population (estimated at 14,000,000).

Lower Prices for Houses Not Expected Before '52

The fellow who has put off home ownership till prices come down may have to wait yet another year — or longer. If anything, pressure is on to raise costs slightly; no cut in price is seen at least through 1951.

(*Continued on page 222*)



"Air conditioned" by Nature and Gate City Awning Windows.
The new WINDSWEPT APARTMENTS, Miami, Florida
Robert Law Weed & Associates, Architect-Engineer
William Weed, Builder, Inc., Contractor

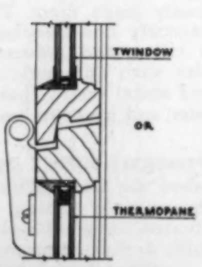
SELDOMRIDGE

First choice in any climate...

in the SOUTH
in the NORTH

No matter what the climate or season, Gate City Awning Windows provide 100% controlled ventilation, plus the unique advantages of wood construction—rigidity, noiseless operation, architectural harmony, naturally tight closure, and freedom from corrosion and discoloration.

Thanks to the natural insulating qualities of wood, their frames, sills and sash members are not subject to ruinous condensation. While storm sash are available, many architects prefer to specify double glazing (see detail) and have the winterizing built right in. Once installed, Gate City Awning Windows provide a lifetime of trouble-free service with minimum maintenance. They are suitable for any project, from the small home to the large institution.



Thermopane or Twindow, set in putty, available at moderate extra cost.

For further information, see Sweet's or write to
Gate City Sash & Door Co., Dept. R-6,
Fort Lauderdale, Fla.

SEE OUR CATALOG IN SWEET'S

Gate City **Wood Awning Windows**
Toxic-treated against rot-fungus-termites

Offices and Factory: Fort Lauderdale, Florida • Export Sales Representative: Frazar & Company, 50 Church Street, New York 7, U.S.A. • Cable Address: Frazar, N. Y. • Agents in principal cities throughout the world.

HOLOPHANE Lights Both Houses of Congress

HOLOPHANE Lighting in the newly modernized
Chamber of the United States Senate.

DAVID LYNN, *Architect of the Capitol*
FRANCIS P. SULLIVAN, *Associate Architect*
THOMAS W. MARSHALL & JAMES M. GONGWER,
Consulting Engineers
HARBESON, HOUGH, LIVINGSTON & LARSON,
Consultants
LEO H. CLEARY, *Electrical Engineer*

In the reconstruction and remodeling of both Houses of Congress, HOLOPHANE units were selected. The specialized knowledge and long-time experience of HOLOPHANE engineers were called upon once again to integrate the lighting with the needs of an important interior.

HOLOPHANE *Engineering Service, for which there is no charge, stands ready to help you with your needs.*

Holophane
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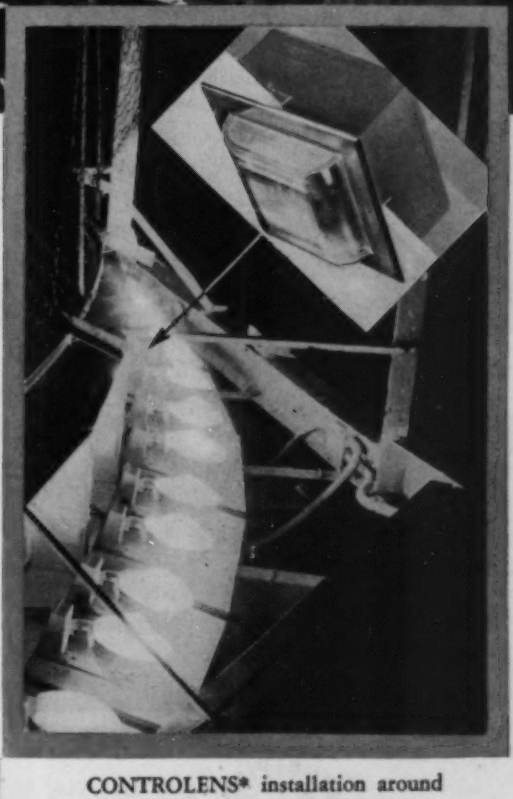
Lighting Authorities Since 1898 • 342 MADISON AVENUE, NEW YORK 17, N.Y.
THE HOLOPHANE COMPANY, LTD., THE QUEENSWAY, TORONTO 14, ONTARIO



CONTROLENS* installation around cove—units open for relamping.

*Reg. U. S. Pat. Off.

CANADA

(Continued from page 220)

Demand for low- and middle-priced houses continues high; that means materials are still at premium demand, keeping prices strong. The March hike in rail freight rates may send prices up on such building materials as bricks, cement, lumber and steel. Manufacturing costs and fuel costs are also increasing and may be reflected in material costs soon.

Another round of wage increases by the building trades is also pending. Trades unions across Canada are angling for new wage rates that could send house building costs up. In Toronto, the plumbers' union threatens strike action on a demand for another 25 cents an hour; masons in the Toronto area are setting $2 an hour as their wage goal. The plumbers' union in Ottawa, on strike since January, faces court action. Although employers, attempting to hold building costs steady, have refused all wage demands up to now, some increase may be inevitable.

London and Kingston Are Test Areas for New NHA

While Ontario hammers out details with Ottawa, two Ontario cities, London and Kingston, have become test areas for the latest National Housing Act legislation.

Under this plan, as reported in previous issues of the RECORD, Canadians are aided in buying houses through increased mortgage loans and lower down payments. Of the capital cost of each scheme, 75 per cent is advanced by Ottawa, 25 per cent by the province. It is up to municipalities to demonstrate their need for housing, to make land available at reasonable cost and to pay an as yet undetermined portion of the province's 25 per cent share. Ottawa is willing to finance installation of services where these are lacking, but the cost will be charged against the property.

In London and Kingston plans call for five-room houses to sell at $6100; six-room houses at $7600. These are to be sold with no down payment or only a token payment — say $600 — the cost to be paid off in 30 years at $30 and $38 a month. Provisions have been made for straight rental housing, but this will probably play a secondary role for the present.

Ontario argues that the down payment should be dispensed with entirely, that the cost could be recovered by higher mortgage payments. For the present, Ottawa doesn't agree.

British Columbia plans to initiate a

(Continued on page 224)

RIO GRANDE NATIONAL LIFE

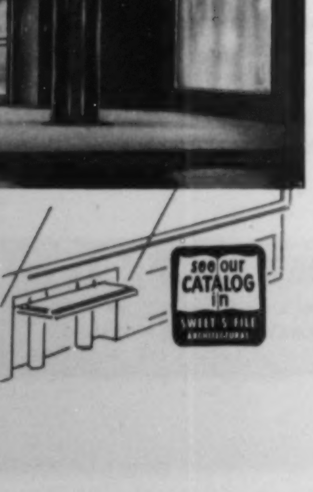
Dallas's Newest Fine Building

INTERNATIONAL REVOLVING DOORS IN USE, OF COURSE!

Thrusting up through the Dallas skyline is one of the finest, most modern buildings in Texas and the entire country. It is the Rio Grande National Life Insurance Building on Field Street, from Elm to Pacific. The entrances in the Rio Grande building are built around International-Van Kannel Revolving Doors — for comfort, efficiency, economy. You can be of no better service to your clients than to specify International-Van Kannel Revolving Doors.

ARCHITECT: GRAYSON GILL

RIO GRANDE NATIONAL

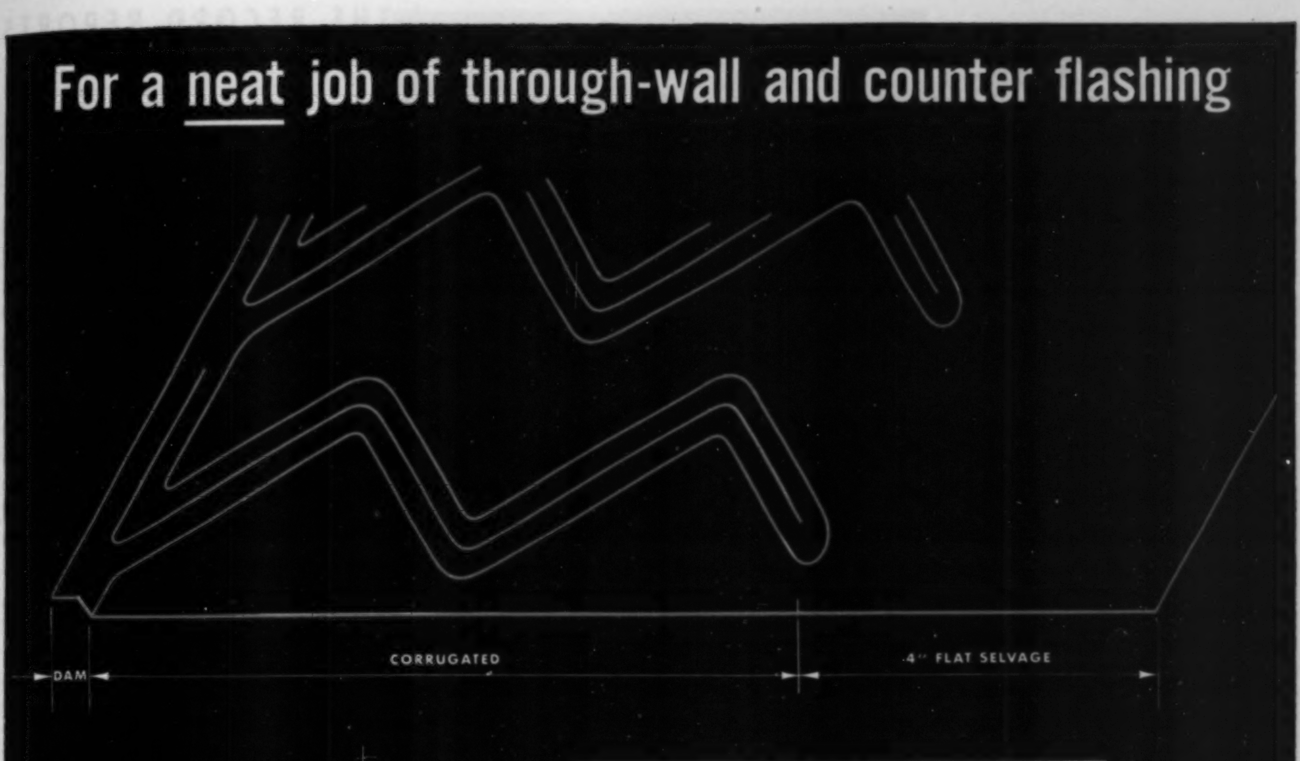

see our CATALOG in SWEET'S FILE ARCHITECTURAL

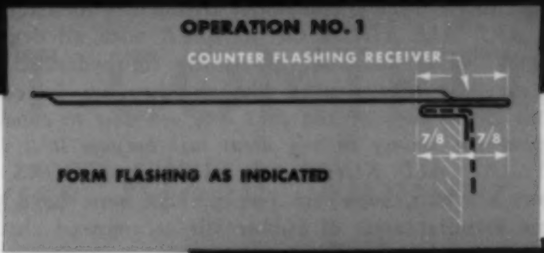
REVOLVING INTERNATIONAL VAN KANNEL DOORS

1806 EDGAR STREET EVANSVILLE 7, IND.

Above: Photo of Fairlawn Theater, Toronto, Ont., one of first units in new Odeon chain. The late Jay I. English, Architect

For a *neat* job of through-wall and counter flashing


DAM
CORRUGATED
4" FLAT SELVAGE


OPERATION NO. 1
COUNTER FLASHING RECEIVER
7/8
7/8
FORM FLASHING AS INDICATED

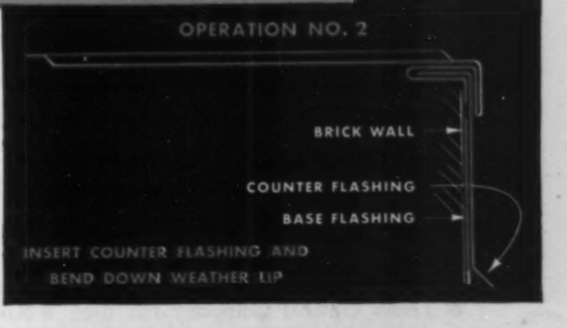
with ANACONDA Through-Wall Flashing

Heretofore, the usual practice has been to tuck metal counter flashing into the mortar joints of a parapet wall and raise the exposed portion of the counter flashing in order to install the base flashing, then bend it down again to make the job storm-tight.

That's outmoded. Outdated. And needlessly expensive. Besides, you simply can't get a neat job that way. The metal, when bent down and up, cannot be made to lie snugly against the wall.

ANACONDA Through-Wall Flashing has a plain selvage that makes installation of the counter flashing neat, fast and simple. Incidentally, no other through-wall flashing has this feature.

With ANACONDA Through-Wall Flashing two easy operations do the trick as shown in these drawings.


OPERATION NO. 2
BRICK WALL
COUNTER FLASHING
BASE FLASHING
INSERT COUNTER FLASHING AND
BEND DOWN WEATHER LIP

Information on ANACONDA Through-Wall Flashing and procedures for installation are detailed in Publication C-28. A copy will be forwarded upon request. Address The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

6003

ANACONDA
THROUGH-WALL FLASHING

You can build it better with ANACONDA®

THROUGH-WALL FLASHING

A frank statement about

WRIGHT RUBBER TILE for Kitchens

Too many architects, builders and floor covering dealers use an incomplete line of reasoning when they come to selecting floors for commercial or residential kitchens. They say, "Kitchens are greasy . . . grease ruins rubber . . . therefore I can't use rubber tile in the kitchen."

NOTHING COULD BE FURTHER FROM THE TRUTH! In using this line of reasoning they are depriving their customers of the best possible floor covering for the purpose.

Let's look at the facts and see why, instead of being unacceptable, WRIGHT RUBBER TILE is completely satisfactory for kitchen use.

THERE ARE ALL KINDS OF RUBBER with all degrees of resistance to oil. There are rubber packings for hydraulic pumps that give excellent service even though they are in constant contact with oil. *In view of this fact it is not wise to condemn a floor covering for service in oily areas just because it is rubber.*

THERE ARE ALL KINDS OF RUBBER FLOORS. Some rubber floors are soft, some are porous, and some have porous fillers. Some manufacturers of rubber tile recommend that their material not be used in kitchens.

BUT WRIGHT RUBBER TILE is dense, firm, tough and non-porous. It has excellent resistance to all normal exposure to oils and greases and there is plenty of proof to support this statement.

For example, WRIGHT RUBBER TILE has been successfully used in commercial and residential kitchens for nearly thirty years. Service has been excellent and many users have specified WRIGHT RUBBER TILE repeatedly.

In more severe service, WRIGHTFLOR Hard Surface Rubber Tile has been used successfully in service stations where the floors are in constant contact with gasoline, oils and greases. The Bausch & Lomb Optical Company has used WRIGHTFLOR successfully in their plant where the floor is constantly exposed to kerosene, oils, abrasives and ground glass.

There is no doubt that WRIGHT RUBBER TILE *is* grease resistant. Furthermore, its clear colors make a more beautiful floor. The dense, smooth, non-porous surface makes the floor easier to keep clean and new looking. Its resilience makes it more comfortable to walk on and provides extra safety in the form of skid protection. Lastly, its long life makes it more economical.

In short, WRIGHT RUBBER TILE is the finest of all floor coverings for kitchen use. Don't let a superstition place you at a disadvantage. Get acquainted with WRIGHT RUBBER TILE and you will be specifying it more and more.

WRIGHT MANUFACTURING CO.
5204 Post Oak Road • Houston 5, Texas

WRIGHT RUBBER TILE

FLOORS OF DISTINCTION

- **WRIGHTEX—Soft Rubber Tile**
- **WRIGHTFLOR—Hard Surface Rubber Tile**
- **WRIGHT-ON-TOP Compression Cove Base**

2427

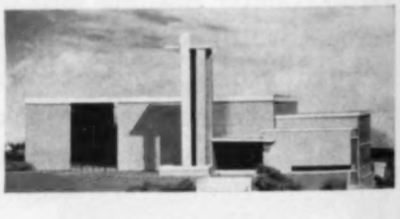
CANADA

(*Continued from page 222*)

$20 million federal-provincial-municipal scheme. Details are now being worked out at the different levels of government. Three other provinces — Quebec, New Brunswick and Newfoundland — are also at this stage. First step in Newfoundland's program is a slum clearance project in St. John's. The province is to pay $750,000 and Ottawa $2¼ million of the $3 million bill.

Only Prince Edward Island has turned down Ottawa's offer. Because the tiny province has a very small urban population, there's no acute housing problem.

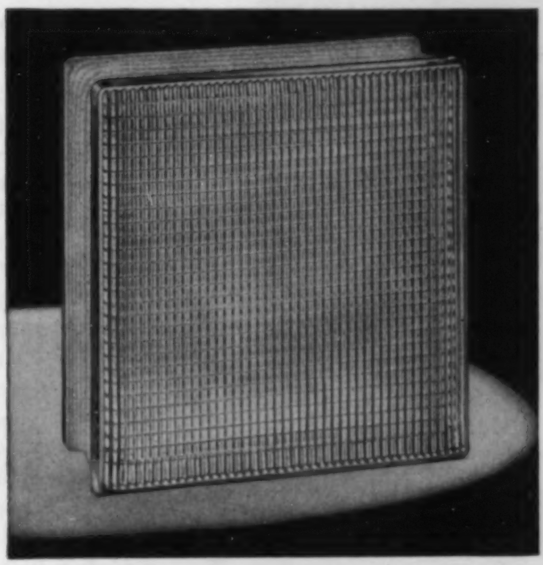
The prairie provinces, Manitoba, Saskatchewan and Alberta, are holding off. Alberta is readying a new Municipal Aid Act which provides loans to municipalities for such projects as installing utilities. From this beginning, the province may move toward agreement with the federal government. Saskatchewan wants Ottawa to contribute the province's 25 per cent, claims that existing financial commitments will keep the province out of the scheme otherwise. Manitoba is still reading the fine print in the new legislation, is "uncertain" about participation.



Above: Photo of model shows projected building for First Unitarian Church of Toronto, celebrating its 105th anniversary. Richard A. Fischer, Toronto, Architect

Ten representatives of business and the technical professions guide Council policies. During a typical year as many as 3000 Canadians have used the facilities provided; and immigrants with specialized training have been assisted in finding positions as well. While the main idea is to help Canadian industries, requests for graduates have been filled from as far away as India.

(*Continued on page 226*)



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Please send me more information on the new daylight-directing Insulux Glass Block Number 363.

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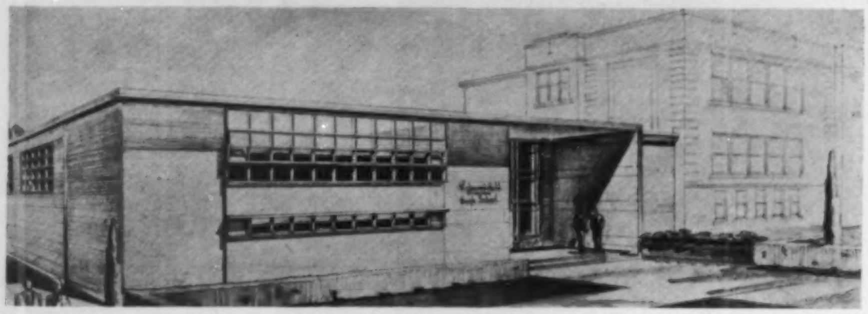
CANADA (*Continued from page 224*)



$400,000 addition to Richmond Hill High School near Toronto. Page & Steele, Architects

John B. Parkin Discusses Schools — Past and Future

Teachers gathered at the Ontario Educational Association's spring conference heard some of the province's schools labelled "grim and ugly fortresses" while others were called "as good as any in the world."

Toronto's John B. Parkin, architect and authority on school design, charged that many older buildings are firetraps, with oily floors, outdated sanitation facilities, poor lighting and inadequate play areas.

Gazing into the crystal ball, Mr. Parkin suggested the school of the future might be without windows, or consist of 10 floors of classrooms set on top of one another.

What we want, he said, are buildings "the pupil hates to leave because every hour of work or play is a delight."

Veterans Build Their Own Under Veterans' Land Act

Construction Superintendent H. C. Griffith reports that 70 per cent of all houses built under the Veterans' Land Act in 1949 were erected by the veterans themselves.

Most of the spare-time builders do all the unskilled work, take on some of the more difficult tasks as well. Figuring labor costs at about 42 per cent of the cost of a house, veterans save up to 32 per cent by giving a year's leisure time to the project. Mr. Griffith estimates the cash saving to be from $1500 to $3000.

The be-your-own-builder idea spread across the country from the maritimes, is backed by V.L.A. officials, who claim this is the only way a family can hope to get a good house for $6000, the limit allowed by the Act.

To teach the veterans and their wives how to build, evening classes are being held in several areas, with response reported as overwhelming.

Advice to Graduates: Get Some Practical Experience

Technically-trained university graduates aiming at top senior jobs should first lower their sights to positions offering plenty of basic, practical experience.

That's the opinion of most technical leaders recently polled by the *Financial Post.* These leaders say the graduate should understand that he needs a long and arduous apprenticeship before he can achieve the professional efficiency and the knowledge of industrial relations

(*Continued on page 228*)

for roof or floor

fills

lightweight... insulating

Use concrete made with Waylite aggregate for roof or floor fills. Reduces deadweight. Has high thermal insulation and sound-deadening values. Incombustible. Easily placed, especially around pipes and conduits.

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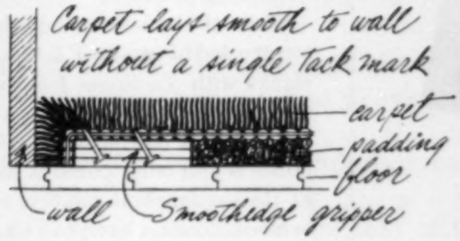
In addition to fills, Waylite aggregate makes lightweight structural concrete that saves as much as 35% deadweight and can be designed up to 4000 psi. See Sweet's for engineering data. For further information and quotations, address the Waylite Co., 105 W. Madison St., Chicago 2, or Box 30, Bethlehem, Pa.

for lightweight concrete

WAYLITE AGGREGATE

how to get superior carpet installation by specifying smoothedge

TACKLESS METHOD



HOW smoothedge WORKS

"*Smoothedge*" gripper holds the carpet firmly and *invisibly* from underneath. As a result, ugly tack marks, bulges, and dust-catching identations are eliminated. The carpet is also easier to take up for cleaning. No special provisions are required for either wood or concrete floors. To specify, merely state, "Carpet to be installed with *Smoothedge* carpet gripper, or equivalent."

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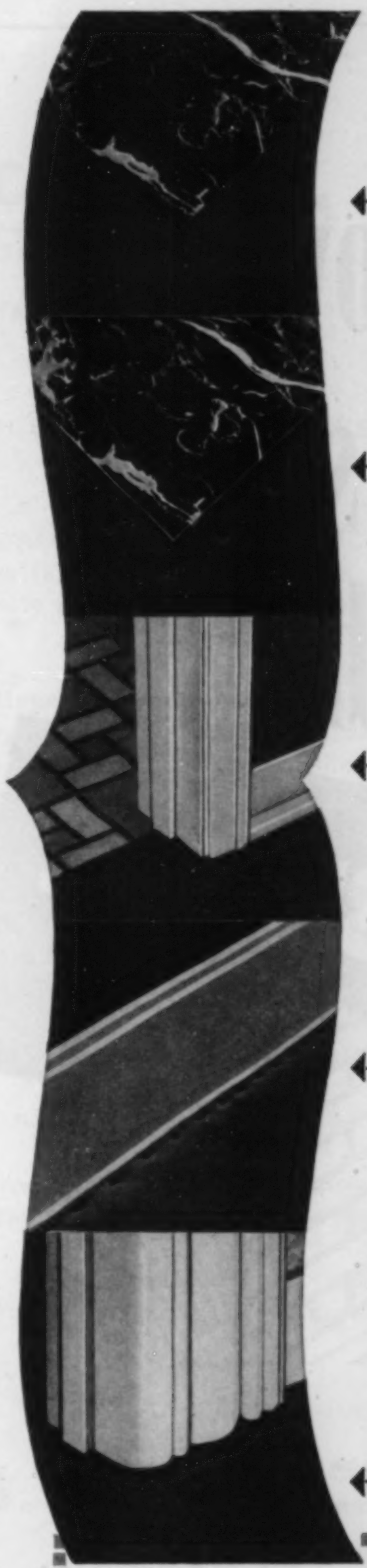

GET THIS • Smooth, beautiful effect at carpet edge. No ugly tack marks, scallops, dirt-catching indentations, or ripples.

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TACKLESS INSTALLATION

AVOID THIS • Ugly puckers or tack marks are eliminated when carpet is installed the modern "*Smoothedge*" tackless way.

SPECIFY **smoothedge**
TACKLESS INSTALLATION

AT FLUSH DOORWAYS • Get unblemished appearance at this most noticeable area. You see only beautiful carpet, no tack marks with "Smoothedge."

SPECIFY **smoothedge**
TACKLESS INSTALLATION

ELIMINATE TACK MARKS • Tack marks never improved the appearance of lovely wall-to-wall carpet. Even the best turn-and-tack job shows tack marks.

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AT DOOR JAMB • For smooth flowing carpet at door jambs, carpeted stairways, and wherever wall-to-wall carpet is installed, the floor covering looks its loveliest when you

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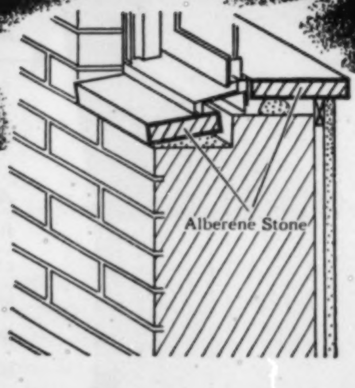

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CANADA

(*Continued from page 226*)

and other fundamentals which will qualify him for an executive job.

A unique job-placement agency that will help many of this year's budding architects, engineers and scientists get off on the right foot is the Technical Service Council. Supported by interested manufacturing concerns, it attempts to keep technically trained graduates in Canada by uniting them with the Canadian employers who can employ their skills to greatest advantage.

Cedar House Displayed at Better Homes Exhibition

A solid cedar model house was the top news at the annual Better Homes Exhibition in Vancouver recently.

A year ago solid cedar houses were built experimentally by B. C. Lumber Manufacturers' Association. A four-room dwelling of 768 sq ft area was erected in 350 man-hours for $4580. Insulation and interior finish brought the cost up to $4978.

Walls of the latest model house are constructed of two-in. T & G solid cedar planks with aluminum foil blanket insulation and plywood interior finish. The house is basementless, rests on fir beams set on cedar posts. It has a four-in.-thick cedar plank sub-floor topped by hemlock flooring, except in kitchen and bathroom.

N.H.A. Loans at New High

More joint loans won N.H.A. approval during March than in any previous month, according to Central Mortgage & Housing Corp.

Figures show 2622 joint loans approved, an increase of 900 over February and of 1504 over March of 1949. Value of loans, representing 2863 dwelling units, is $20,362,000.

Second Canadian Home Show Held At Toronto May 19–27

Keen interest was shown by the public and the construction fraternity in the second annual Canadian National Better Homes Exposition, held at Exhibition Park, Toronto, May 19–27.

House building and home improvements were covered in exhibits ranging

(*Continued on page 230*)

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COMCO Colloidal Paste thoroughly disperses and holds the concrete aggregate in suspension, keeping the heavier aggregate from settling and 'setting up'. It reduces the water-cement ratio as high as 25%, thereby densifying the concrete and reducing the volume. It eliminates honey-combs and voids that result from poor dispersion and excess water.

COMCO COLLOIDAL PASTE makes concrete plastic and workable - flows like oil around reinforcings and footings. It mixes the concrete thoroughly with a minimum of handling and wear and tear on machinery and equipment.

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500 lb. barrel	$0.165 lb.	250 lb. barrel	$0.18 lb.

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CANADA

(*Continued from page 228*)

from basic building materials to modern furnishings. Sponsors of the show were the National House Builders' Association and the Toronto Metropolitan Home Builders' Association.

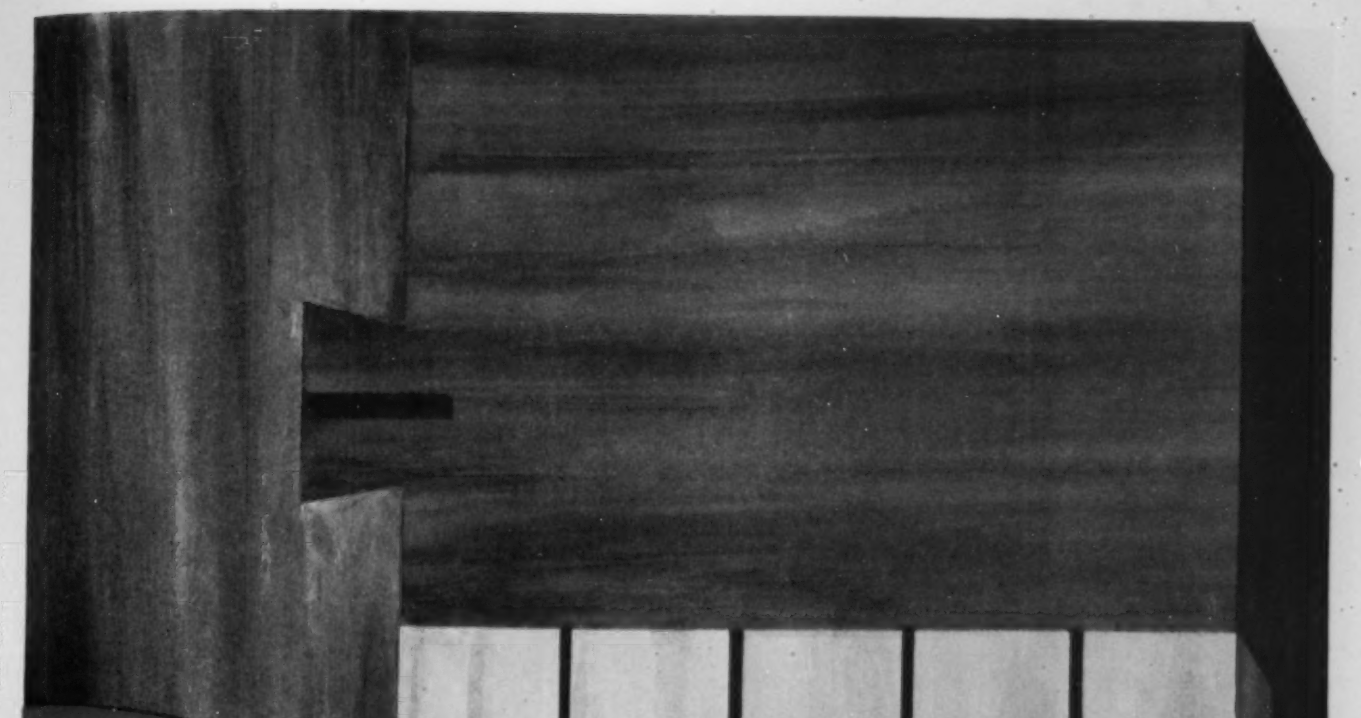
One salient exhibit portrayed the history of small house architecture from Indian tepees to streamlined bungalow. Presented by Central Mortgage & Housing Corp., it demonstrated the right and wrong ways of constructing a house. Scale models were used for illustration. Giveaway booklets provided the latest information on N.H.A. financing.

Above and below: Two of the scale models in the 1950 travelling exhibit of the Central Mortgage & Housing Corp. The display, which had its premiere at the Canadian National Better Homes Exposition, was notable for its illustration of basic principles for good house construction. Rotating platforms hold models

Underground Wiring System Reported Installed at Low Cost

Architects specializing in project housing will be interested in a new un-

(*Continued on page 232*)



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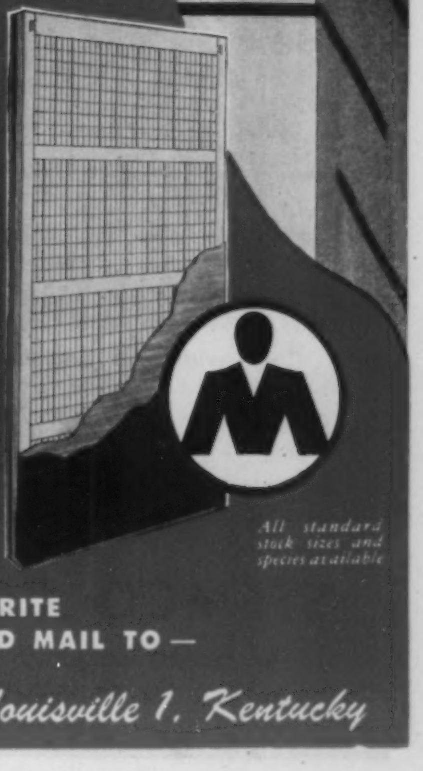

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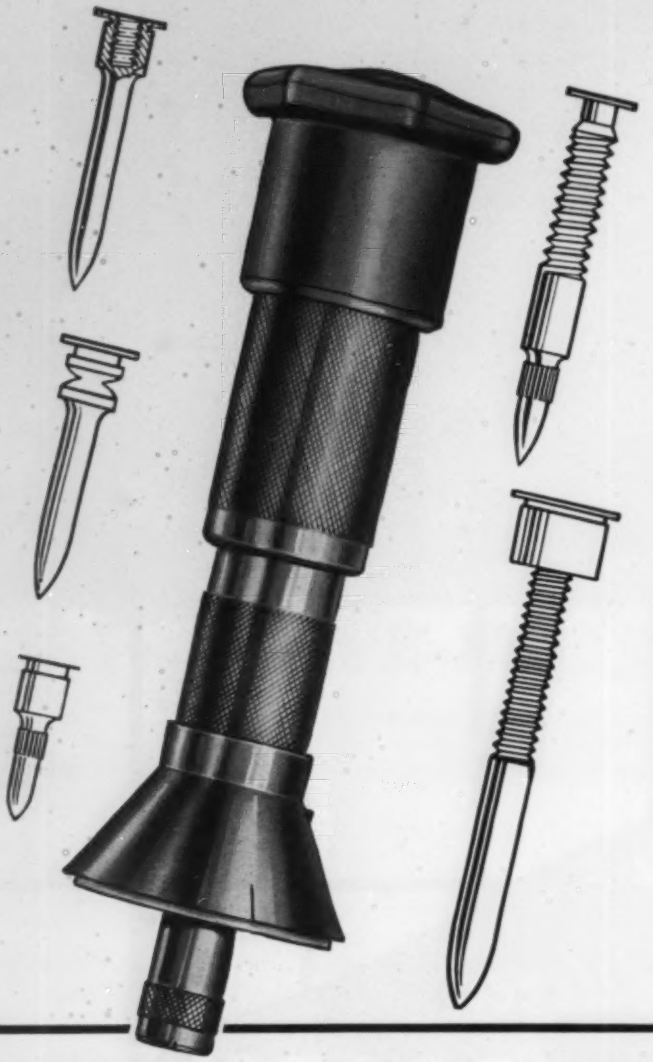

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PIONEER IN POWDER-ACTUATED FASTENING

CANADA

(*Continued from page 230*)

derground wiring system installed in a Niagara Falls, Ont., subdivision. The advantages of burying wire instead of carrying them overhead are many, but up till now it's cost four or five times as much.

The comparatively recent development of low-cost insulated wiring suitable for underground use made the Niagara Falls installation possible. In effect, the sidewalks are employed as a protective covering for the wiring. The only evidence of the existence of electrical service is an occasional box-like transformer structure.

While the capital outlay was about 20 per cent more than for overhead wiring, the new system has 20 per cent greater capacity. Its life expectancy is 50 years, or twice that of an overhead system. Maintenance savings are realized by cutting out a complete replacement during the next half century, and by eliminating the cost of repairs to poles and wires damaged by weather, as well as the cost of tree pruning.

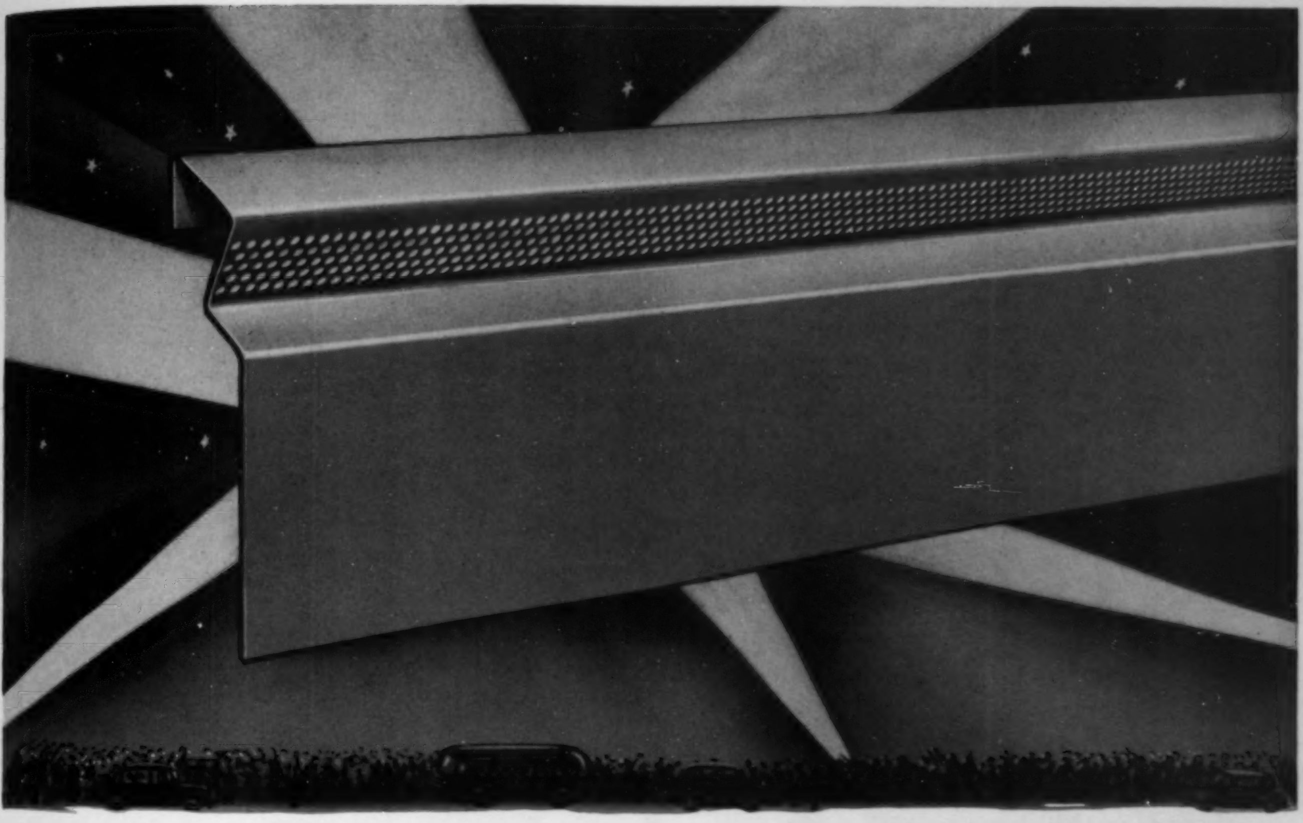
It is estimated that the relative installation cost would be lower on a larger project. There could be more mechanization and bulk buying of supplies. It would be less expensive, also, to locate each transformer in the center of a block.

Canadian Slighting of Native Talent Decried

Too many Canadian organizations are looking south of the border for engineering brains, instead of using Canadian talent, complained President J. E. Armstrong of Montreal, in a talk before the Toronto branch of the Engineering Institute of Canada.

Dr. Austin Wright, general secretary, expressed agreement with Mr. Armstrong, and noted that Ottawa too hires American engineers when Canadians could do the job as well. He stressed that imported specialists were necessary only in unusual cases.

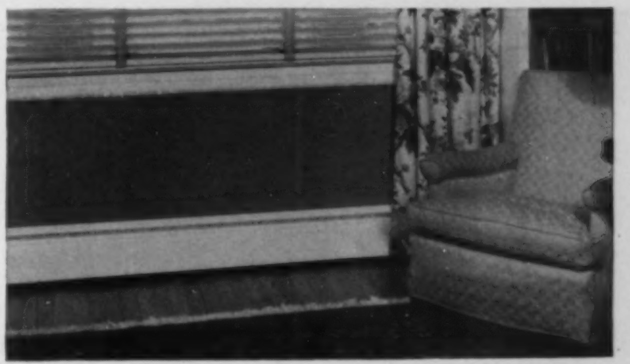
The Institute plans to publish a directory of consulting engineers throughout Canada, with details of special qualifications. There are now 13,000 members in 31 branches of the national engineering body.



New Beauty *for Vulcan Baseboard*

MORE EYE APPEAL . . . MORE SALES APPEAL IN VULCAN'S NEW TYPE L FRONT COVER

Designed Exclusively for Vulcan by famous industrial designers, and RAYMOND LOEWY ASSOCIATES.



Here is *MAGIC* in Baseboard Cover design. The source of heat becomes invisible because Type L blends so completely with the room decoration — yet the smooth, absolute heating comfort of Vulcan fin-tube radiation is just as effective as ever.

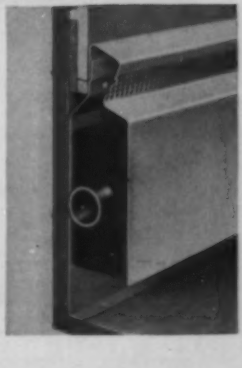
Every architect, heating engineer, and homeowner who was privileged to preview Vulcan Type L gave it instant approval — a sure sign of its sales appeal and popularity.

Made for Semi-recessed and Non-recessed installations, Type L has complete accessories and is available in any desired length in increments of 1".

Remember Vulcan fin-tube radiation is easy to install . . . requires few fittings or supports, comes cut to length, ends threaded or chamfered.

For Smooth Heating Comfort, for Beauty of installation. Vulcan has no equal.

You have to look *twice* to see it . . . experience its smooth heat but *once* to know why Vulcan is specified by leading architects and heating engineers.



Cross section Type L Cover, Semi-recessed.

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More Living Comfort PER SQUARE FOOT

Self-contained, leakproof shower baths which harmonize in quality and appearance with the finest of modern plumbing fixtures, Weisways help you put more livability into every house you plan, even where floor area is limited.

Weisway

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Floor plans shown below reveal how Weisway Cabinet Showers combine with other fixtures to provide more bath facilities in limited floor area. These plans will suggest to you many other ways in which these leakproof modern bath units can provide extra facilities in small homes as well as large.

The Weisway line includes models suitable for every class of construction, from most luxurious to most economical. Every model embodies the basic Weisway quality construction and service-proved materials.

Outstanding quality feature of Weisways is the receptor, formed in one piece of heavy enameling iron, without seam or crack, with stainless vitreous porcelain enamel finish and exclusive foot-grip, no-slip floor.

Weisway's dependable, leakproof performance through the years protects your reputation, Mr. Architect. Specify Weisway and be safe! Write now for catalog and detailed information.

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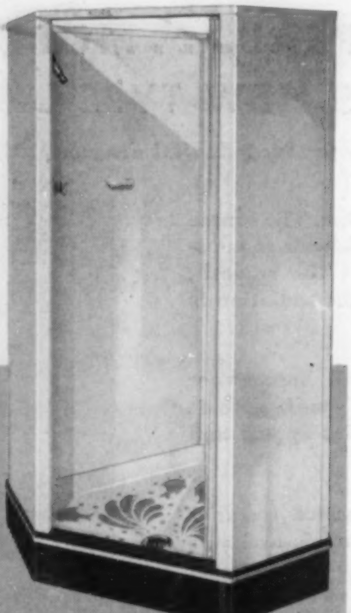
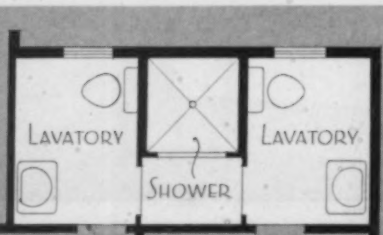
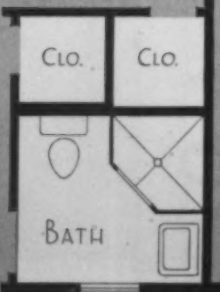
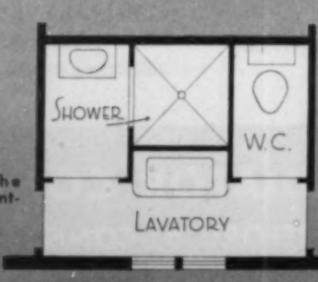




One Weisway gives the practical effect of two bathrooms in this arrangement.



Corner entrance models save floor area for extra closets here.



Weisways fit the trend to compartmentized bathrooms.

A.I.A. CONVENTION

(*Continued from page 10*)

eral manager, Famous-Barr Store, St. Louis; Kenneth C. Welch, A.I.A., Grand Rapids, Mich.; James A. Wares, A.I.A., Marshall Field & Co., Chicago; Harold D. Hauf, A.I.A., editor-in-chief, ARCHITECTURAL RECORD, New York; and Lawrence B. Anderson, Department of Architecture, M.I.T., Cambridge, Mass.

Ecclesiastical — William Ward Watkin, A.I.A., Department of Architecture, Rice Institute, Houston, Tex.; Ernest A. Grunsfeld Jr., A.I.A., Department of Architecture, Catholic University, Washington, D. C.; Maurice Lavanoux, editor, *Liturgical Arts* Magazine, New York.

On the Awards committee with Mr. Heino are: Alfred L. Aydelott, Memphis; Richard M. Bennett, Chicago; Samuel E. Lunden, Los Angeles; George F. Pierce Jr., Houston; Harold R. Sleeper, New York; Charles F. Cellarius, Cincinnati.

The opening session of the convention also heard a report on the awards in the 1950 Building Products Literature Competition conducted jointly by the A.I.A. and The Producers' Council; and at the same session special A.I.A. awards were presented.

Special Awards

These brought the Fine Arts Medal to Edward Steichen of the Museum of Modern Art, New York City, known for his creative talents in photography and for his outstanding work in connection with photographic records of both World Wars; the Craftsmanship Medal to Joseph Gardiner Reynolds of Boston, for his distinguished work in stained glass design and execution; honorary memberships to Miss Harlean James of Washington, executive secretary of the American Planning and Civic Association, and F. Stuart Fitzpatrick, also of Washington, manager of the Construction and Civic Development Department of the Chamber of Commerce of the United States. An honorary corresponding membership was awarded to Jose Calderon, outstanding architect of Lima, Peru.

In the Product Literature Competition, Certificates of Exceptional Merit and Certificates of Merit were offered for three classes of literature: (1) basic technical and design literature; (2) product literature; (3) promotional literature. The Jury of Awards was at

(*Continued on page 236*)

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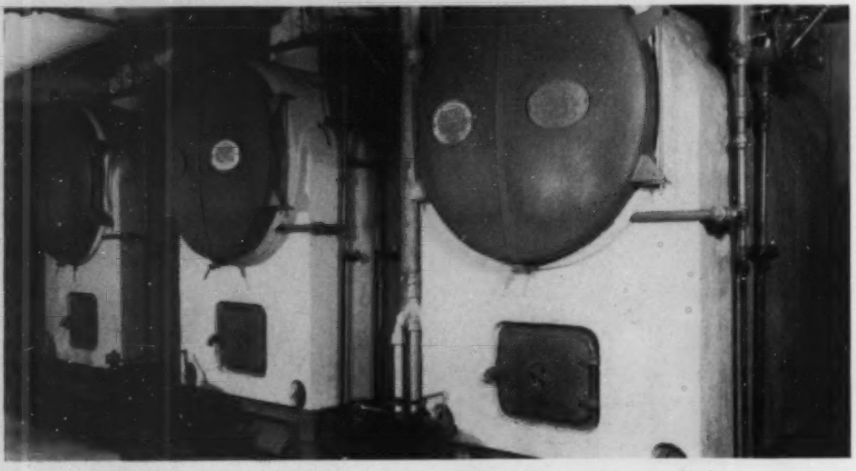
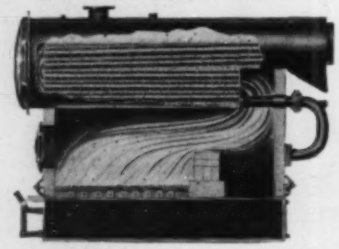


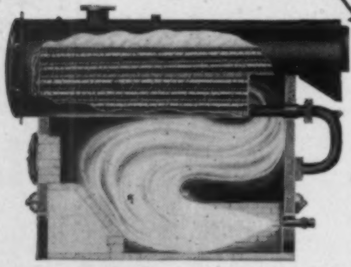
Titusville Boiler Installation of three natural gas fired steel heating boilers in an important southern high school.

Cutaway view to show Type CC Compact Boiler (hand fired)

1. Large Grate Area
2. Large Furnace Volume
3. Large Disengaging Area
4. Large Steam Volume
5. Long Heat Travel

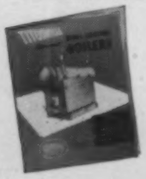


These Features Assure More Savings in Fuel and Maximum Heat Output



1. Long Flame Travel
2. Max. Furnace Volume
3. Reasonable Heat Release
4. Highest Efficiency
5. Longest Life

Cutaway view to show Type CM Compact Boiler (mechanically fired)



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THE TITUSVILLE IRON WORKS CO.
TITUSVILLE, PENNA.

A.I.A. CONVENTION

(*Continued from page 234*)

liberty to refrain from awarding Certificates of Exceptional Merit if no entries appeared to merit such recognition, and such certificates were in fact awarded only in Class I.

Product Literature Winners

Acoustical Materials Association and American Institute of Steel Construction received the only Certificates of Exceptional Merit given — these for their entries in Class I (manuals, handbooks, design data, application data, with primary emphasis on problem rather than product). The winning entries were *Sound Absorption Coefficients of Architectural Acoustical Materials* and *Manual of Steel Construction*.

Honored with Certificates of Merit in Class I were: Portland Cement Association; General Electric Co.; Westinghouse Electric Corp., Elevator Div.; Bell & Gossett Co.; Marble Institute of America, Inc.; West Coast Lumbermen's Association; Painting and Decorating Contractors of America; Revere Copper and Brass, Inc.; Gymnasium Seating Council (for *Modern Gymnasium Seating* by Harold R. Sleeper, F.A.I.A.); and American Seating Co. (for *The Coordinated Classroom* by Darell Boyd Harmon).

In Class II (catalogs, catalog-manuals, products data, or combination of product data with use and application data, with primary emphasis on product), Certificates of Merit were awarded to: Armstrong Cork Co.; The Celotex Corp.; Kaiser Aluminum and Chemical Sales, Inc.; Trimedge, Inc.; Pomona Tile Manufacturing Co.; Westinghouse Electric Corp., Elevator Div.; Otis Elevator Co.; Columbia Protektosite Co., Inc.; National Fireproofing Corp.; Tuttle and Bailey, Inc.; Minneapolis-Honeywell Regulator Co.; Anemostat Corp. of America; National Radiator Co.; The Clay Products Association, Inc.; Payne Furnace Div., Affiliated Gas Equipment; Owens-Corning Fiberglas Corp.; Smithcraft Lighting Div.; Century Lighting, Inc.; Unistrut Products Co.; Inland Steel Products Co.; Alhambra Foundry Co., Ltd.; The Producers' Council, Inc.

Also United States Gypsum; Julius Blum & Co., Inc.; Josam Manufacturing Co.; Speakman Co.; J. A. Zurn Manufacturing Co.; Crane Co.; Aluminum Co. of America; The Barrett Div., Allied

(*Continued on page 238*)

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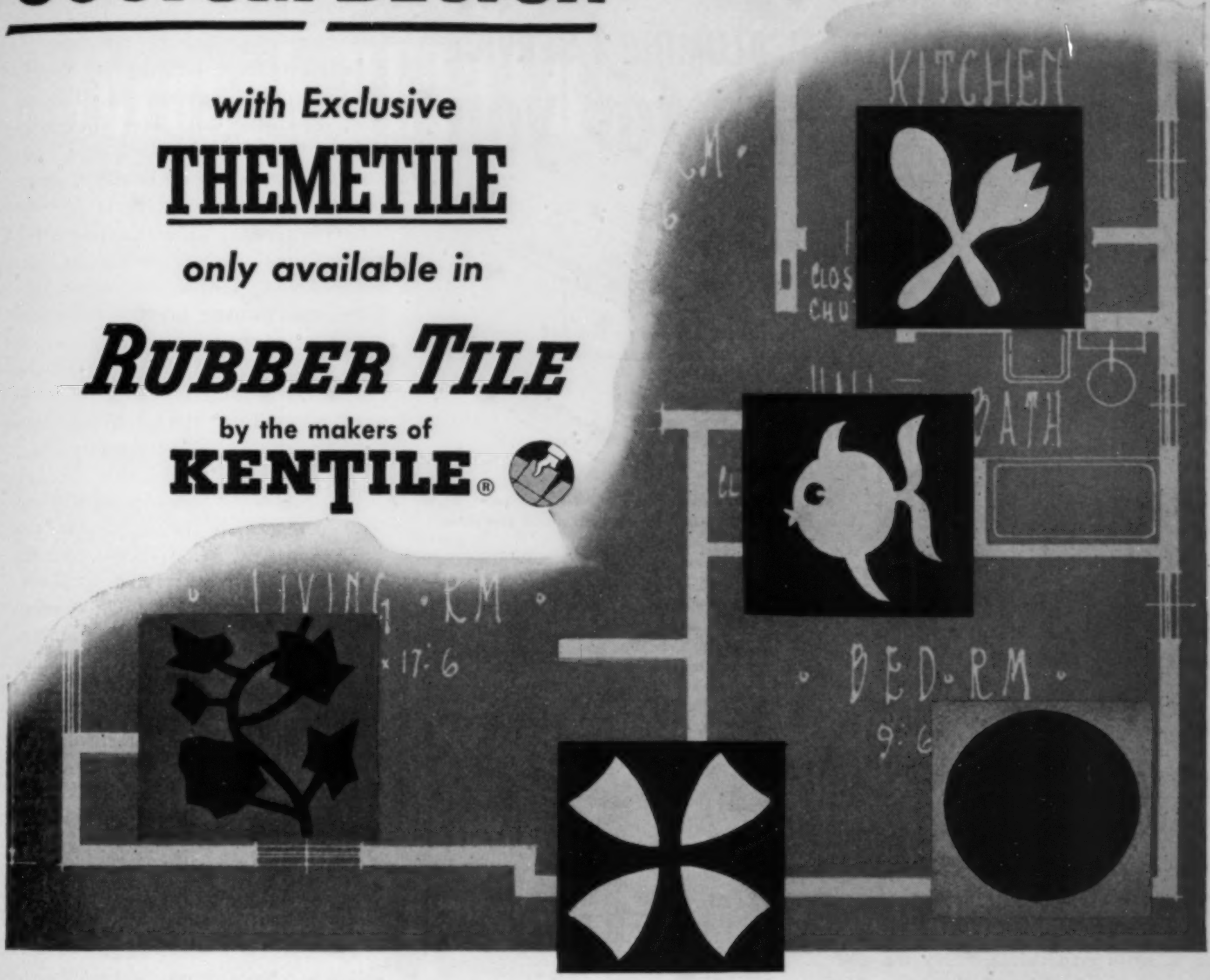

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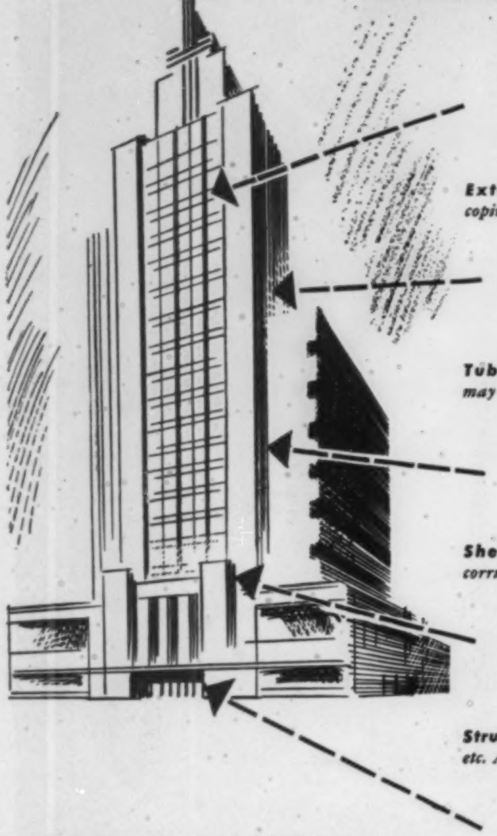

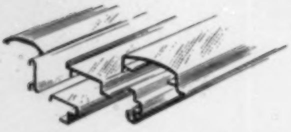

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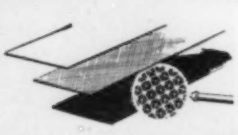

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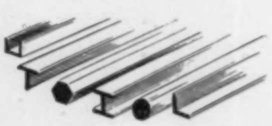

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A.I.A. CONVENTION

(*Continued from page 236*)

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Certificates of Merit in Class III (promotional material, reminders, announcements, testimonials, case histories, etc.; primary purpose, sales promotion) were presented to The Kawneer Co.; E. L. Bruce Co.; Armstrong Cork Co.; S. Blickman, Inc.; California Redwood Association; Timber Engineering Co.; The Herman Miller Furniture Co., Zeeland, Mich.

Members of the Jury of Award for the 1950 competition included: (for the A.I.A.) Lessing W. Williams, A.I.A., chairman, New York; Julian E. Berla, A.I.A., Washington, D. C.; George B. Cummings, F.A.I.A., Binghamton, N. Y.; George S. Idell, A.I.A., Philadelphia; Ossian B. Ward, A.I.A., Louisville, Ky.; (for The Producers' Council) W. H. Easton, Otis Elevator Co., New York; Charles M. Mortensen, executive secretary, The Producers' Council, Washington, D. C.; Howard L. Spindler, American Radiator & Standard Sanitary Corp., New York.

Urban Planning Talks

The need for widespread citizen education as a basis for any real progress in redevelopment was reiterated again and again in the speeches and symposia on urban and regional planning. Architects were urged to take the lead in developing public interest and understanding in a problem which has come to hold the seeds of complete disaster with the advent of the atomic bomb.

Paul Windels, president of the Regional Planning Association since 1943, summed up the basic factors of that problem as ". . . an antiquated and outmoded city pattern, the slowing up of city growth, the escape of population to the surrounding areas, the spread of the monolithic structure of the central city over the surrounding countryside, a low birth rate, vulnerability to military attack and the crushing financial burdens of local government, all resulting from the evils of excessive congestion."

(*Continued on page 240*)

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A.I.A. CONVENTION

(*Continued from page 238*)

Declaring that even though this country seems to be committed to an urban civilization, it is possible to control the conditions under which the urban areas develop, Mr. Windels outlined some objectives:

"It would seem that the greatest problem to be overcome is congestion. The basic aim of any new design must be to open up the overbuilt, crowded centers of cities to sun and air, to greater freedom and ease of movement for both people and vehicles and in the process to restore the smaller neighborhood patterns in the peripheral areas which now receive the major impact of population increases.

"Why should we aim at this pattern? Because we know that for normal, wholesome living, people must have a share in community life and association — something of human scale and participation to rekindle a sense of individual dignity and significance and social responsibility. Lives based on the anonymity of the conglomerate urban mass create the problems, human, social and political, which continue to plague us, and the anti-social mass emotions which spring from such environment.

"The blighted residential areas should be redesigned, based on a more even distribution and a generally lower density of population and a pattern of local neighborhoods, each separated from the others by broad avenues which serve also as main traffic highways. Within these main highway borders each neighborhood should have its own interior street layout, its own schools, playgrounds, shopping centers, parking and garage facilities, public and community buildings and other neighborhood amenities — with harmonious architectural features as though each were, within the city, a separate village with its distinctive identity, interests and community life."

Although the so-called garden housing projects represent "an enormous advance" over what they have replaced, Mr. Windels said, they are "not the final answer."

"We must now raise our sights," he asserted, "and move on to the planning of entire neighborhoods with a variety of types of housing and more particularly we must attract families with small children by variations on the theme of one- and two-family buildings."

(*Continued on page 242*)

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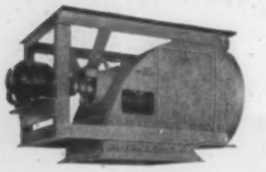

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A.I.A. CONVENTION

(*Continued from page 240*)

As for suburban areas, Mr. Windels outlined some goals of the New York Regional Plan Association's plan for the 17 counties surrounding the New York area as ". . . *First*, that we deliberately set about to preserve the essential identity and character of these small towns. *Second*, that we channel a major part of the region's growth toward a much larger number of centers. *Third*, that we deliberately design and create entirely new and distinctive self-sufficient communities to accommodate a substantial part of our regional growth."

Public interest and public understanding were placed first by Mr. Windels among steps necessary to achieve the objectives he outlined.

"Every effort should be made," he said, "to strengthen citizen organizations for metropolitan planning and to establish them where they do not exist. Such agencies have already been established in New York, Pittsburgh, Chicago, San Francisco, St. Louis, Grand Rapids, Louisville, Cleveland, Toledo and a few other metropolitan areas. The complex problems of metropolitan areas, particularly those that straddle state lines, demand the existence of such unofficial agencies which are ideally suited to deal with such problems free from limiting political considerations."

Intensive research in the field of urban development, described as "barely touched" so far, is another step needed for achieving development objectives, according to Mr. Windels, who said there should be established a National Commission for Urban Population Distribution to study and report on trends and patterns of population movement to and within urban areas.

State and federal cooperation in urban planning and policies must also be enlisted, Mr. Windels added.

Lewis Mumford, author, teacher and town planning consultant, also urged the need for education in the aims of planning in his talk on regional planning and the small town.

"If the small, biotechnic city is to come into its own, as the agent of a new civilization," he said, "it will have to learn the arts of regional planning, regional culture and regional design; and create a life more highly organized and more purposeful and far more widely cultivated than that of the outmoded metropolis."

(*Continued on page 244*)

Industrial heating goes modern too!

Steel pipe is first choice for radiant heating advantages

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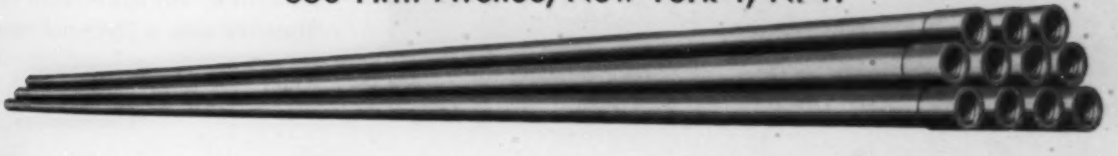

A.I.A. CONVENTION

(Continued from page 242)

Mr. Mumford sees the approach of "a new economy that will supplant the metropolitan economy."

"In this new economy," he declared, "any overgrowth in urban centers, like any over-concentration of wealth and power, will be regarded as a serious disorder, like the excessive functioning of the pituitary gland in the human body. The post-metropolitan economy will be one in which the advantages of concentration will be achieved by organization and plan, not by a mere massing together of population in a limited area; and in which the small community, kept close to the human scale, but subserving a wider range of human needs than any existing small town, will be the normal form of the city. This does not involve a step backward into the primitive and the undeveloped: it rather involves a step forward to a higher kind of organization, more advanced even in its technical facilities, and certainly far more economical, than the metropolitan economy."

The conception of bigness as a goal for small towns to strive for must be laid aside first of all, Mr. Mumford said, in favor of an ideal of organic growth, socially controlled and limited.

Summing up the principles which should underly planning for the towns of the future, Mr. Mumford said:

"Regional planning, insofar as it concerns itself with the small town, must address itself to the task of maintaining and multiplying small towns, not in furthering their indefinite growth. The small town of the future, once regional ideals and goals supplant metropolitan ideals, will have the following characteristics: First: it will be limited in area, limited in population and limited in density. In areas where clusters of small towns may be developed, the normal size of the small town will be between twenty thousand and fifty thousand people; in other areas, where because of topographical difficulties, perhaps, such clusters may be hard to achieve, as in the heavily dissected plateau of the Allegheny Valley, the small town might reach sixty, eighty, or in exceptional cases, perhaps a hundred thousand inhabitants; these would be normal variations, like the variations in height between human beings, variations which do not imply either dwarfism or giantism. Each town will be surrounded by a permanent greenbelt, either established by a state zoning law, or owned by the city; and since high land values are the main cause of deficient open spaces in the city, the smallness of the town and its restricted density — never more than a hundred persons per acre in the densest quarter — should permit sufficient garden space to give every family, and even such bachelors as may wish it, enough garden space to raise flowers and a limited amount of succulent vegetables. Such towns will have green cores within their superblocks, as well as greenbelts to define their outer limits. This pattern will both govern fresh growth and guide the internal reconstruction of the small town, as it seeks to develop its own qualities and resources."

Since all these conditions cannot be achieved by any single small town, Mr. Mumford said, a "regional equivalent" to metropolitan advantages must be found.

(Continued on page 246)

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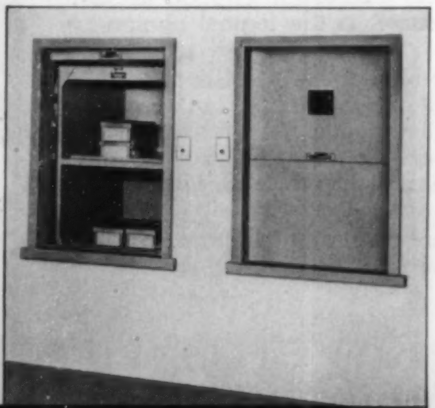

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Says Carl G. Lans, Director,
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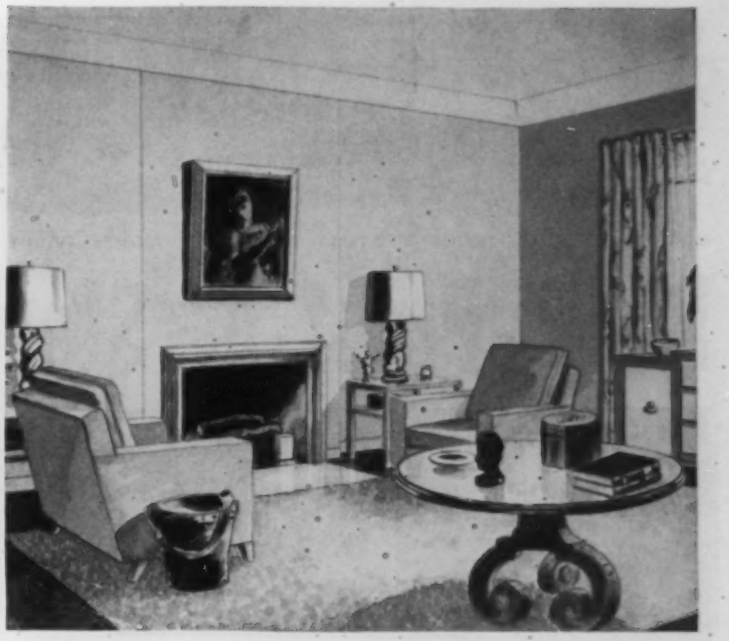

"When dry wall has once been accepted and gotten a hold, it has become general. The Washington, D.C., Metropolitan area is such an example. Before the war, everything was lath and plaster; now it is a rare thing in residential construction. Dry wall has proved satisfactory — not only because it is much more economical, but also because it produces a true, straight wall . . . and eliminates the introduction of many gallons of moisture into the house. In addition, it is a time saver."

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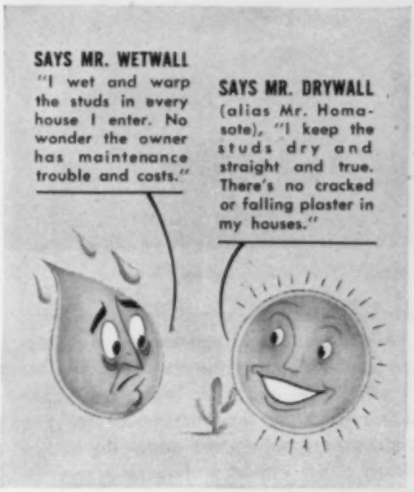
For 32 years Homasote has been used for Dry Wall Construction—in millions of dollars of private homes. Since 1936 its use has been supported by intensive research costing more than $500,000.

Dry Wall Construction — with Homasote Big Sheets — offers many major advantages . . . The average wall is covered with a single sheet; batten strips and unsightly wall joints are eliminated. Joints are made at doors and windows, as desired . . . Labor costs are minimized; many fewer handling operations; many fewer nails . . . In a single material you provide lasting insulation value and great structural strength . . . You build a quieter home, free from dampness — with dependable insurance against musty closets and mildewed walls.


SAYS MR. WETWALL
"I wet and warp the studs in every house I enter. No wonder the owner has maintenance trouble and costs."
SAYS MR. DRYWALL (alias Mr. Homasote), "I keep the studs dry and straight and true. There's no cracked or falling plaster in my houses."

Dry Wall Construction — with Homasote Big Sheets — means walls that are permanently crackproof, ideal for paper or paint, lending themselves to modern decorating effects, modern mouldings and trim.

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The Nova Roller Door ( )
The Nova-Shingle and the Nova-Speed Shingling Clip ( )

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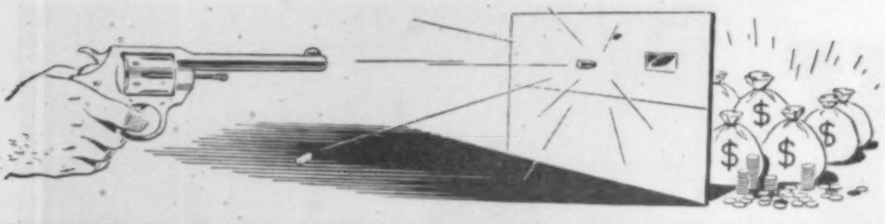
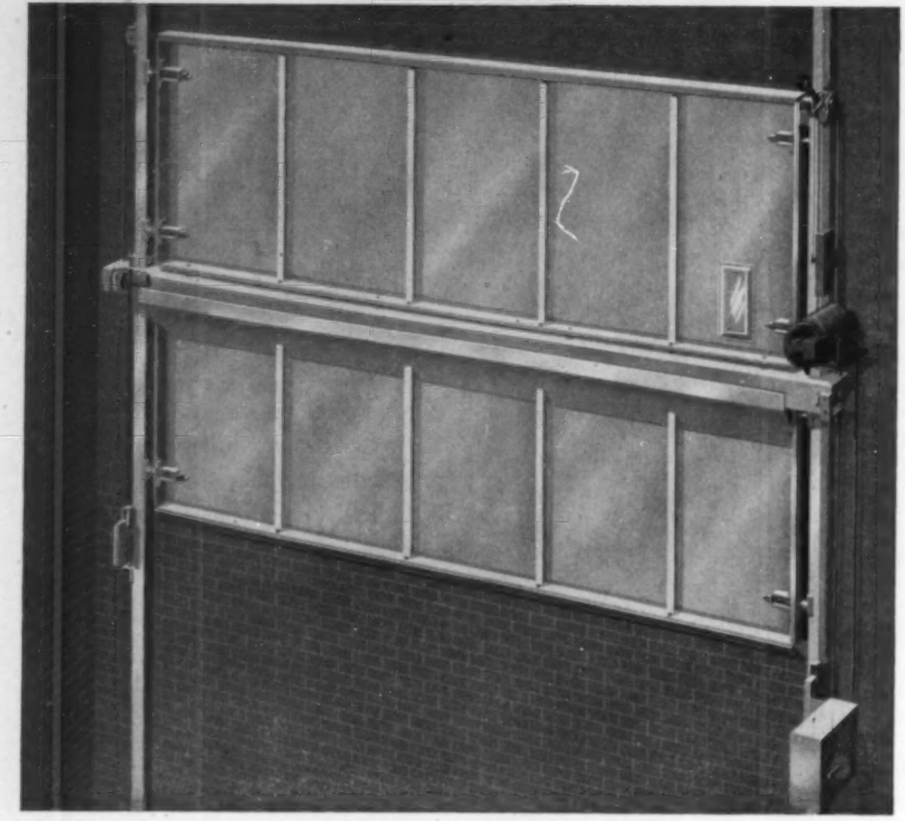


OTIS BUILDS BULLET-PROOF HOISTWAY DOORS FOR MONEY CARRYING ELEVATORS

Bullet-Proof or Standard



A shaftway view of an Otis power-operated door installation.

Otis all-steel, bi-parting freight doors are available for all size openings. Either power-operated, as illustrated, or manually operated. They're all-steel construction. Angle iron frame. Vertical stiffener bars. Bolted steel panels that are easily removed for replacement when necessary. Otis freight doors have no easily damaged wood panels; no wood cores to rot.

When required, Otis hoistway doors may be ordered with any of these optional features: Weather-stripping for exterior doors; special panels, including stainless steel, to match architectural treatments; extra heat insulation; non-sparking electrical equipment for hazardous atmospheric conditions.

All Otis standard bi-parting doors protect the building against the spread of fire into or out of the hoistway. Their construction conforms to the requirements of the Fire Underwriters' Laboratories and may be furnished either with or without Underwriters' labels.

Otis freight doors are also made in a pass-type for limited floor heights. All doors open smoothly to full car opening. Lock independently for safe operation. For further details write for Booklet A-389-F or phone your Otis office. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

Otis

ALL-STEEL • BI-PARTING

FREIGHT DOORS

A.I.A. CONVENTION

(*Continued from page 244*)

"If the growth of the small town must be limited," Mr. Mumford put it, "its limitation will be more acceptable if it becomes part of a regional constellation of cities, with a common regional government for its overall activities, and with a capacity for mobilizing and distributing its cultural resources into each small town, instead of concentrating them, in a fixed, static, immobile pattern in a single dominating center.

"Let us not talk about regional planning," he went on, "until we believe in the principles of regionalism with sufficient conviction to demand the political authority that will be necessary, on the basis of a progressive extension of the welfare clauses in our state constitutions, to carry them out. For we need a regional authority with the power to float bonds and to make investments in new communities which our housing authorities now have; we need a regional authority with the power to zone land for urban and rural uses, and where necessary to buy land for public uses of an undetermined nature; we need an authority that will be capable of planning new cities, in order to keep the new towns under its jurisdiction from passing, under continued population pressure, beyond the normal limits of their growth; we need a regional authority with the power to set aside primeval areas and to fix new industrial sites; so that recreational facilities and industrial opportunities will be planned with a view to the needs of the population as a whole. No single community, however enlightened — not even the biggest of metropolitan centers — can make such plans or carry them out."

Areas where the kind of development he outlined would still be possible were listed by Mr. Mumford — the San Bernardino Valley in southern California, the Columbia River Valley, the Tennessee Valley and the state of North Carolina among them.

In conclusion, Mr. Mumford emphasized that the conception he had outlined was a deliberate departure from the idea that "regional planning is merely a means of dealing in a coordinated manner with the natural background."

"The further purpose of regional planning," he said, "is that of creating a balanced environment, with balanced communities, for people who are deter-

(*Continued on page 248*)

Welding Cuts Structural Costs 12%
Saves 7% on Steel

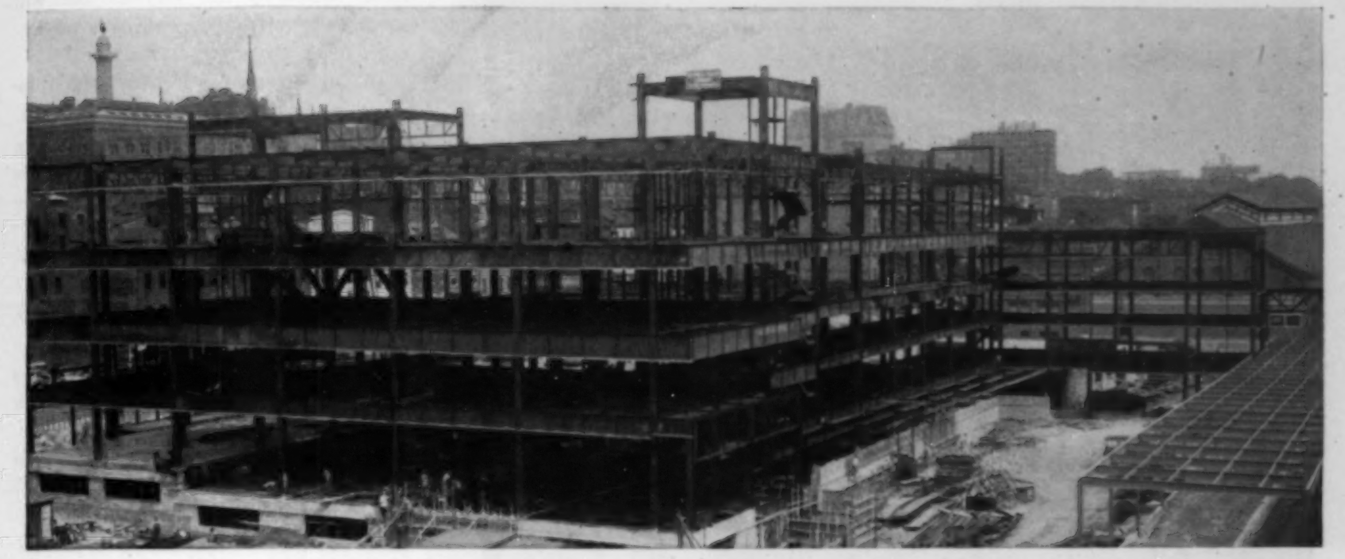


Fig. 1. Framework partially complete for the 5 story plant of Baltimore Sun, Baltimore, Md.
Architects: Palmer, Fisher, Williams and Nes;
Consulting Engineer: Van Rensselaer P. Saxe; General Contractor: George A. Fuller Co.

By VAN RENSSELAER P. SAXE
Consulting Engineer
Baltimore, Md.

A SAVING of $68,522 has resulted from the adoption of welded design for the publishing plant of the Baltimore Sun and Evening Sun shown in Fig. 1. Structural weight was cut by over 7%. A sizable amount of money was saved also on concrete and form work, as well as on reduced building height made possible by continuous beam design involving shallower structural members.

Typical framework connections illustrating the simple details for field erection are shown in Figures 2—3. Beams are positioned on erection seats or clips and then field-welded with Lincoln® "Fleetweld 5" electrodes using 400 ampere Lincoln "Shield-Arc" motor driven arc welders. In the design of frame members, bevel cuts for connections were so planned as to make maximum use of fast, easy downhand welding.

The quotation of the low bidder for riveted construction was $551,508. The actual cost of the welded frame was $482,986. This accounted for the $68,522 saving in the structure.

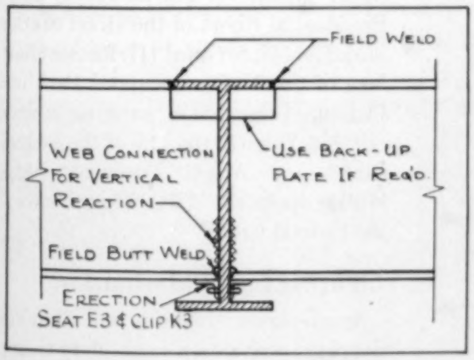

Field Weld
Web Connection For Vertical Reaction
Use Back-Up Plate If Req'd
Field Butt Weld
Erection Seat E3 & Clip K3

Fig. 2. *Typical beam to girder connection.*

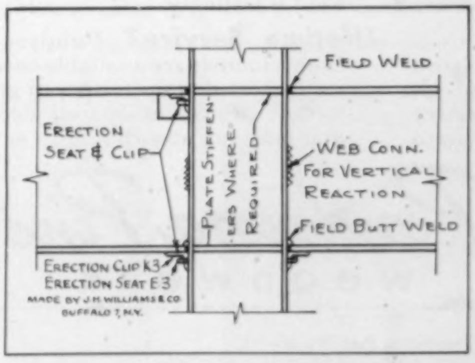

Field Weld
Erection Seat & Clip
Plate Stiffeners Where Required
Web Conn. For Vertical Reaction
Field Butt Weld
Erection Clip K3
Erection Seat E3
Made by J.H. Williams & Co. Buffalo, N.Y.

Fig. 3. *Typical beam to column connection.*

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Quick Installation? Ponderosa Pine windows come as pre-assembled units in modular sizes—ready to install with a minimum of time and effort. Screens and storm sash are ready-made in sizes to fit these windows.

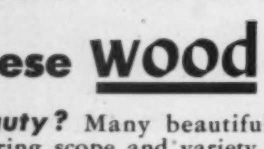
Weather-Tightness? Precision construction, wood's natural insulation quality, plus effective weather stripping—all combine to assure greater year-round comfort.

Easy Operation? Ponderosa Pine window units are prefitted and use modern mechanical sash balances to give lasting ease of operation. In addition, these wood windows minimize vibration and rattling.

Economy? Modest in first cost, Ponderosa Pine windows save in maintenance costs because they take paint or any finish easily and hold it lastingly.

Lifetime Service? Ponderosa Pine windows are available chemically treated at the factory to give further protection against decay and moisture absorption.

FOR FRIENDLY LIVING . . . Ponderosa Pine WOODWORK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City.......................*Zone*......*State*............

A.I.A. CONVENTION

(*Continued from page 246*)

mined to lead an autonomous and balanced life, which will not merely recapture traditional values that have often fallen by the wayside but will more fully utilize the positive advantages of an advanced civilization."

In an absorbing lecture which he illustrated with slides taken on the spot, Albert Mayer gave a vivid and exciting picture of the job he and his associates are doing with the new capital of the Punjab in India.

Helmut E. Landsberg's talk on "Climate and Planning of Settlements" emphasized the change in man's attitude toward climate as a factor in planning — from the days when design of dwellings followed the dictates of climate through the recent era of considering it something to be fought with "gadgets," to the present day when intelligent planning takes advantage of desirable aspects of climate (capitalizing on prevailing winds, heat and light from the sun, etc.) and shuts out the undesirable through site selection and planning and building design.

Mr. Landsberg stressed also the new importance placed by planners on *microclimate* — the climatic environment of a very small area, which may be influenced by purely local factors to small-scale differences from another area only a few miles away. Microclimatic factors should be considered, he said, not only in design of individual houses or small subdivisions, but in large-scale city planning.

A joint luncheon meeting of the A.I.A. and the Joint Committee on the National Capital was held on Friday in the Presidential Room of the Hotel Statler. Maj.-Gen. U. S. Grant III, former chairman of the National Capital Park and Planning Commission, gave an address on "150 Years in the Life of the Federal City" and A.I.A. President Ralph Walker spoke on "Fifty Years Hence in the Federal City."

Lighting and Illumination

Symposia on "Lighting and Illumination," the convention's secondary theme, included addresses by R. L. Biesele Jr. ("Daylighting"); Willard C. Brown ("Developments in Light Sources"); C. L. Crouch ("Basic Factors of Vision"); Stanley McCandless ("Dramatic Uses of Light"); and Howard M. Sharp ("The Effect of Basic Light Distribution").

POINTED THE WAY . . .

Since the first units of this communications laboratory were erected in 1945, performance has been watched closely. This was among the first of the parade of postwar, aluminum-clad buildings—industrial, commercial and residential. In each, aluminum was used because it contributed either to lower cost, speedier construction or more efficient operation.

Here aluminum-faced insulated wall panels have equaled or exceeded expectations; have required no maintenance whatsoever.

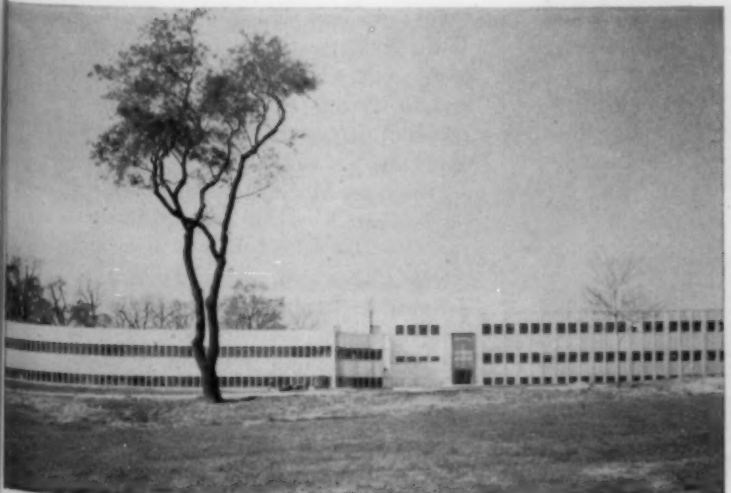
Alcoa engineers have contributed to the planning of every major aluminum-clad building erected in America. Our fund of aluminum knowledge, gained through sixty-two years of research and development, is available to all architects and builders.

For information on any application of aluminum, and for a forward look at aluminum's place in building's future, ask to see the book or film, "The Davenport Story". Call your near-by Alcoa Sales Office, or write ALUMINUM COMPANY OF AMERICA, 1888F Gulf Building, Pittsburgh 19, Pennsylvania.

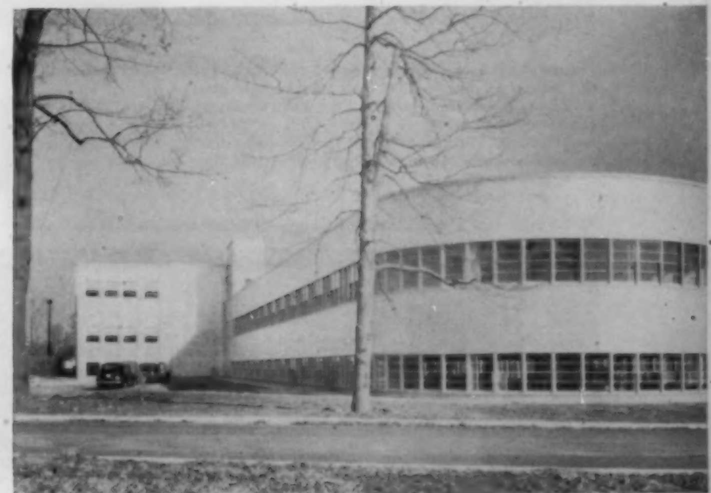
ALCOA

FIRST IN ALUMINUM

Addition of a wing required removal of panels at north end of one building. Microscopic examination of uncovered area revealed no evidence of air or moisture infiltration after three years.



Insulation factor of walls has equaled that of masonry of much greater thickness and cost. According to owners, greatest advantage is low maintenance. None required since erection.



ACOUSTICS

(*Continued from page 169*)

to the criterion sound level. If functional requirements of the building lead to "unusual" noise conditions, the criteria should be modified accordingly. A bowling alley that can be put nowhere but under an auditorium requires especially high insulation above it. A band room adjacent to an auditorium but *never* to be used concurrently hardly requires the normally specified 50–65 db of NR. (But make the client sign an affidavit on that one!)

General methods of noise control

Noise control in buildings is achieved by means of: (1) proper planning, to segregate sounds; (2) proper design and detailing of structures, to block effectively the passage of sounds; and (3) proper utilization of finishes and furnishings, to absorb sound. Segregation reduces noise by putting the source farther away; insulation reduces noise by presenting a barrier against its passage; and absorption reduces noise by draining off sound energy. These three techniques are based on distinctly different physical principles. *A clear visualization of these differences is the first step towards rational acoustic designing.*

Mathematical statements of these effects are sometimes complicated. But basically the equations express what one would expect intuitively: noise reduction increases with the distance of separation, with the insulating value of the structure (usually expressed as transmission loss of a given element), and with the amount of absorption in the room (expressed in absorption units or sabins).

Planning aspects of noise control were included in the previous article. The remainder of the present article deals with engineering methods for achieving noise control by insulation of structures and absorption of finishes.

Calculation of noise reduction

Consider a sound source of constant power output, such as a person talking at a uniform level or a steadily operating motor or fan. If this source is placed in a room, the average sound level throughout the room and more than a few feet from the source is dependent mainly on the number of sound absorption units in the room. But before we can calculate this effect we must become more specific about the physical quantities involved; in order to get answers with meaningful numbers we must agree on some basic definitions, such as the following:

Decibel (db): a logarithmic unit expressing the ratio of two quantities, or the magnitude of one quantity with respect to a specified reference magnitude. The decibel by itself is not an absolute measure of anything unless associated (explicitly or implicitly) with a particular quantity and a particular reference.

Intensity (I): the amount of sound energy falling on a unit area per unit time, usually given in watts/sq cm. Analogous to light intensity.

Intensity level (IL) in decibels: $IL = 10 \log (I/10^{-16})$ where I is the intensity of the sound whose IL we are computing; and 10^{-16} watts/sq cm is the standard reference intensity, which corresponds approximately to the weakest sound the ear can hear. At the threshold of hearing the intensity level (IL) is approximately zero since the ratio $I/10^{-16}$ is unity and the log is thus zero.

Sound level (SL) in decibels: a commonly used measure of the physical magnitude of sound; in certain idealized cases SL = IL; in these articles SL is defined as the quantity read on a standard *sound level meter* when properly

(*Continued on page 254*)

better control of VENTILATION
better control of LIGHT
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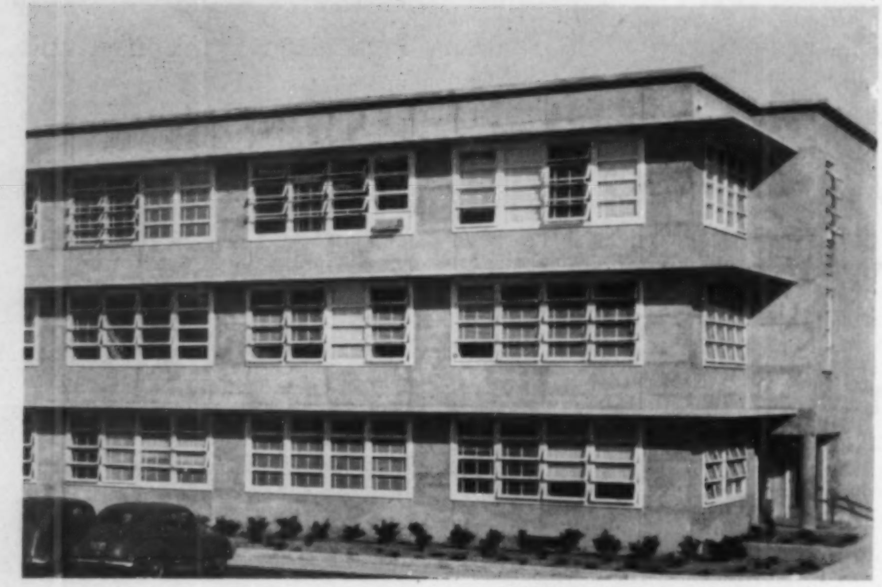
AUTOMATIC MULTIPLE WINDOWS
WOOD PROJECTED AWNING TYPE



Administration Building, Los Angeles City Schools
A. C. Zimmerman, Architect

Dalmo Windows give full control of ventilation from 1% to 100% of the window opening. The angle of the open sash directs air currents upwards, eliminating drafts. The air diffuses from the ceiling and circulates evenly through the room. The open sash sheds rain, deflects wind and allows controlled ventilation under all weather conditions.

Dalmo Windows allow the use of venetian blinds or ordinary shades. The sash can be operated without disturbing blind or shade. Ordinary shades may be attached to the sash itself to control daylight illumination and give uniform light distribution without interfering with ventilation.

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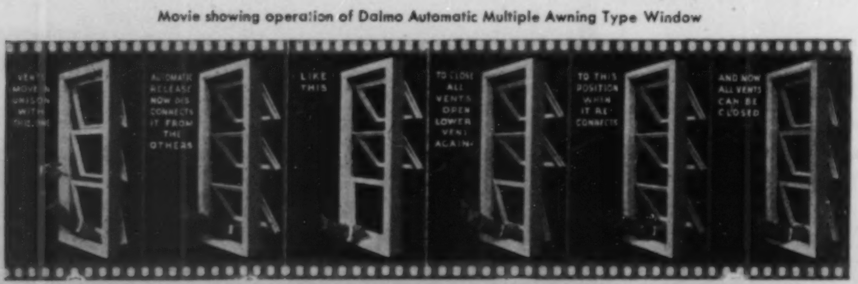
Movie showing operation of Dalmo Automatic Multiple Awning Type Window


VENTS MOVE IN UNISON WITH THIS ONE
AUTOMATIC RELEASE NOW DISCONNECTS IT FROM THE OTHERS
LIKE THIS
TO CLOSE ALL VENTS OPEN LOWER VENT AGAIN
TO THIS POSITION WHEN IT RECONNECTS
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NEXT TIME you see an unusual lighting job . . . such as this classroom with 45 footcandles . . . check the manufacturer's name. Frequently you'll find it's Litecontrol.

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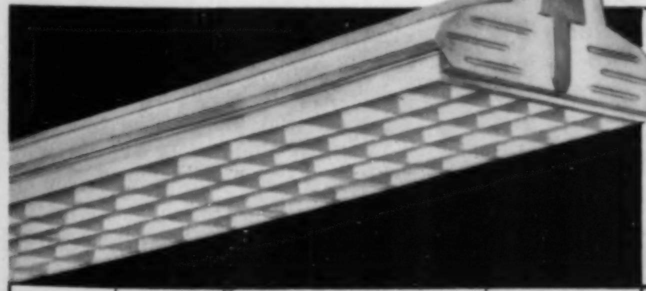
So plan your next job around one or more of the many Litecontrol fixtures. If you like, our lighting specialists will be glad to help you with new and different lighting ideas or with complete layouts.

Architects: Duane Lyman & Associates.
Consultant: E. S. Burrows.
Contractor: Robertson Electric Co., Inc.
Lighting Equipment: 30 Litecontrol No. 4124, 2-lamp fixtures, surface mounted.
Lamps: 2-40 watt, white, fluorescent.
Watts per fixture: 100.
Average intensity in service: 45 footcandles.
Watts per square foot: 2.7.
Type of room: classroom.
Dimensions: 27′-6″ x 40′, 11′ ceiling.



The LITECONTROL No. 4124 Fixture . . .

. . . has all those features so essential for good classroom and office lighting — low brightness, trim appearance, evenly illuminated louvres. Louvres are hinged for easy relamping and maintenance. Spring loaded catches allow opening on either side without special tools. Designed for surface, continuous run or pendant mounting.

Cat. No.	No. of Lamps	HOUSING			Approx. Ship. Weight
		Length	Width	Height	
4124	2-40W	49″	12″	5¼″	33 lbs.
4044	4-40W	49″	16″	5¼″	44 lbs.

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ACOUSTICS

(*Continued from page 252*)

calibrated and used in accordance with standardized procedures.*

Absorption coefficient (α): the fraction of incident energy that is absorbed by a surface; the remaining fraction is reflected.

Absorption units (a) in sabins: the sq ft area of a surface (S) times its absorption coefficient; if several kinds of surfaces are involved in a room the total absorption is sum (αS) over all surfaces.

Transmission coefficient (τ): the fraction of incident energy that is transmitted through a barrier (wall, floor, window etc.).

Transmission loss (TL) in decibels: $\mathrm{TL} = 10 \log(1/\tau)$; since τ is always less than unity its log would always be a negative number; it has been found more convenient to take the reciprocal of τ which is greater than unity so its log, or its decibel value, is a positive number; as TL increases the wall transmits less sound and becomes a better insulator.

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Industrial Ventilation Specialists Since 1904

Equipment for Controlled Air Circulation

Noise reduction (NR) in decibels: $\mathrm{NR} = 10 \log(I_1/I_2) = IL_1 - IL_2$ is the difference in sound level (or IL) between two spaces or conditions.

With these definitions in mind let us return to the room with a steady noise source in it. Let I_1 be the average intensity in the room originally, and I_2 the intensity after some absorptive material has been added to the room. Of course there is always some sound absorption, even in a "bare" room. Let a_1 and a_2 be the number of absorption units before and after adding material. Then: $I_1/I_2 = a_2/a_1$. In words, the intensity is inversely proportional to the number of absorption units.

Thus the introduction of absorption achieves some noise reduction whose amount is: $\mathrm{NR} = 10 \log(I_1/I_2) = 10 \log(a_2/a_1)$. This equation is solved graphically in Fig. 5, which is a general calculation chart for all relations involving decibels. A few calculations by the reader will show that it is easy to get between 5 and 10 decibels of NR by adding absorption to usual rooms; but that it is difficult to get much more than 10 db in most cases.

We should not, however, underestimate the value of 5 or 10 db reduction by absorptive treatment. As a matter of fact, the subjective improvement of the noise environment is often much greater than the calculated NR would indicate. For one thing, absorptive treatment on the ceiling or walls reduces the spreading of the sound; makes the room more like the outdoors where sound diminishes with distance from the source instead of being uniform everywhere. This confinement of noise has a beneficial psychological effect, particularly in large offices or in factories with many noisy machines.

Let us next consider noise reduction between two different rooms, and for simplicity place these rooms adjacent to each other with a common wall area having an S sq ft transmission coefficient τ. Let I_x be the average intensity in one room which contains a noise source, and I_y be the intensity in the other. If either τ or S is increased, the transmitted intensity I_y will obviously increase. In addition, I_y will vary inversely with absorption a_y in the receiving room. In general:

$$\frac{I_y}{I_x} = \frac{\tau_1 S_1 + \tau_2 S_2 + \tau_3 S_3 + \ldots\ldots}{a_y}$$

where S_1, S_2, S_3 etc. are different areas of the common wall having different transmission coefficients similarly designated. These different areas might be a door, a window, and a portion of solid wall.

(*Continued on page 256*)

To the men who build

Eliminating Deep Pockets of Concrete Between Joists IS Important

NAILING top lath to Macomber V Bar Joists saves time, labor and material. Competitive conditions today make these savings worthy of careful investigation.

When top lath is nailed into the steel top chord of the V Joist by driving a staple or roofing nail over the rib or mesh, a solid anchorage is the result.

In place of a specified 2" slab sagging between joists to a 4" slab, you have only a very slight deflection between joists due to the solid anchorage of nailing compared to wiring or clipping top lath.

While nailing is faster than other methods, the big saving is in the amount of concrete saved per square yard of floor area. These economies in both labor and materials can be the difference between profitable and dangerously close operation at today's close bids.

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FOR SPANS 4 TO 40 FEET
MACOMBER NAILABLE
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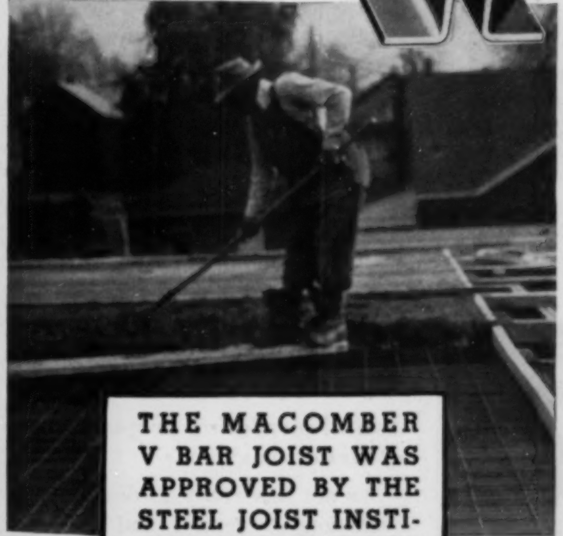

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V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

ACOUSTICS

(*Continued from page 254*)

NR = 10 log(I_x/I_y) = 10 log(a_y/sum τS). This equation is also evaluated in Fig. 5. Notice the reciprocal relation between this equation and the equation in the foregoing paragraph. The former, with I_y/I_x, is in the form commonly used in acoustics literature; but this ratio is always less than unity, so it is more convenient to invert it and get decibels directly as a positive number. Both forms can be read on Fig. 5, where the left hand side gives ratios greater than unity and the right side gives ratios less than unity (i.e., decibels).

Insulation values of structural elements are usually given in terms of transmission loss TL instead of τ; but the conversion from one to the other can be read directly from Fig. 5. It is sometimes convenient to calculate the average or "effective" TL of a composite barrier, given by: Eff. TL = 10 log (sum(S)/sum(τS)), also in the chart.

With the above definitions and formulas one can calculate the NR achieved between any two spaces, and compare this with NR criteria values discussed earlier. Or starting with a criterion and with basic data on wall areas, room finishes, etc., one can calculate the required TL values for particular elements. It is usually necessary to make several successive calculations, with different combinations of TL values, since there are usually several different paths or wall sections through which sound can travel.

There remains one more important quantity to consider: the frequency. We have already seen that noises usually contain many frequency components. Materials and structures also are frequency dependent in their properties of transmission and absorption. Values of α and TL (or τ) are usually measured, and specified in standard bulletins and texts, at several different frequencies. A common set of frequencies is 128, 256, 512, 1024, 2048 and 4096 cps. These are essentially equivalent to the somewhat more convenient set 125, 250, 500, 1000, 2000 and 4000 cps.

The above formulas for NR can be applied to any frequency by using the corresponding values for α and TL. This may be important in special cases involving noises of unusual frequency characteristics. In usual cases (as discussed in earlier sections) we need use only average values. In the case of absorption, the most widely used average is the *noise reduction coefficient* (NRC) which is the average of the α's for 256, 512, 1024 and 2048 cps, taken to the nearest even 5 per cent. Values of NRC are given in bulletins on acoustic materials.

Frequencies for averaging TL values are less standardized. Many references give averages for "low frequencies" and "high frequencies"; or for three frequency bands. In this article *average TL* is the average from 128 to 2048 cps incl.

*Sound insulating properties of structures**

We are now ready to discuss sound insulation of general and particular structural components, in terms of the average TL defined above. As long as the noises involved are of the common kinds encountered in buildings (traffic noise, speech, office machines, mechanical equipment, etc.) we need consider only this Av. TL and its effect on average sound levels.

---

* *cf. Noise Reduction in Dwellings, A. London, Architectural Record, October 1949.*

(*Continued on page 258*)

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ACOUSTICS

(Continued from page 256)

In Fig. 3 several types of walls, floors and panels are illustrated and are arranged according to their transmission loss values. In general the TL increases as the barrier becomes heavier and more complex. Unfortunately the cost also generally increases, so that economic compromises often become necessary. When high insulation is required, a variety of possible alternate solutions should be explored, with detailed and reliable information on sound insulation values.

A homogeneous wall increases in TL as its weight increases. The average trend is shown in Fig. 4; the solid line gives the mean value and the dashed lines give the range within which most homogeneous walls lie. The slope is about 50 db increase for each doubling of weight. Above about 50 db the single wall reaches diminishing returns in db per dollar, and it becomes more economical to split the wall into two or more independent leaves.

Thus, splitting a plastered 8 in. cinder block into two 4 in. leaves separated by a 4 in. air space gives about 55 db, which is about 8 db more than would be obtained from a solid, plastered cinder block of the same weight. Even if total thickness, instead of total weight, is the imposed limitation it will usually be possible to get higher TL in a split wall than in a single one.

Stud constructions, with wood or plaster facings, have similar properties. As long as the two faces are rigidly tied together, the TL follows the general weight law. But if the two faces are structurally separated, on separate rows of studs or on resilient mounts, the TL increases beyond that expected from weight alone.

In all cases, the values indicated in Figs. 3 and 4 will be obtained only if the wall is completely tight against air leaks. Thus, porous blocks are poor insulators when unfinished, but insulate more or less according to their weight when the faces are well sealed by plaster (see cinder block examples in Fig. 3). Any cracks which develop in a wall greatly reduce its insulation value.

The common practice of referring to porous sound absorbing materials as "sound insulation" has led to much misunderstanding. Such materials are almost transparent to sound; by themselves their TL is no more than 5 or 10 db. In some cases these porous materials are useful in the space between lightweight faces of a double wall, where the few db they add might bring the wall up to a required value. But between heavy leaves of masonry the additional gain from an absorptive blanket is negligible.

These brief considerations of sound insulating properties, and the associated figures, constitute only a general introduction to aid in visualizing the principles involved. In any particular problem one should refer to more specific information.

Also, the present article has not dealt with insulating properties of doors, windows and associated details; or with the many tricks and special products that can be used to enhance the insulating properties of structures. Other important subjects omitted include noise control of ventilating systems, effects of structure-borne vibration and impact generated noise, and vibration mounts and special housings to control noises from mechanical equipment at the source. These are all topics for a subsequent article.

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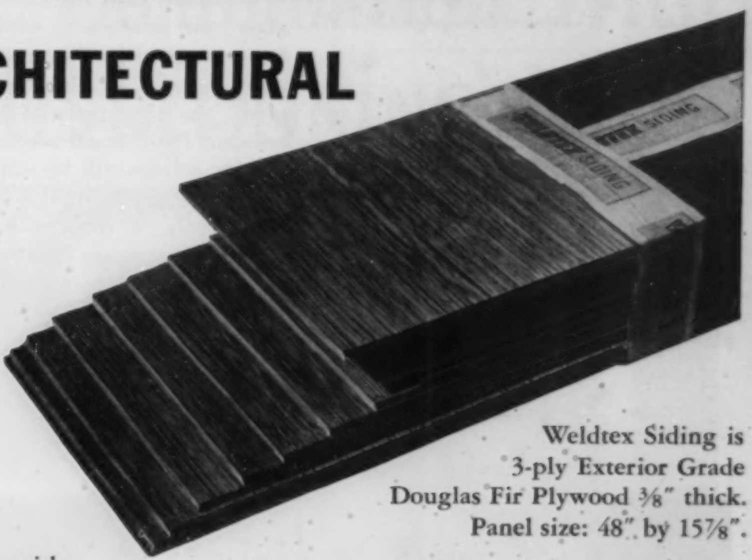
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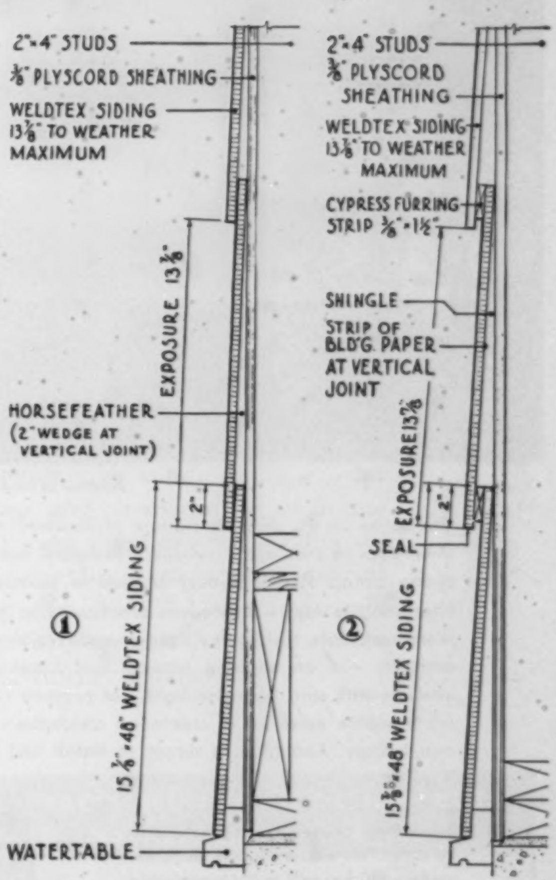
2″×4″ STUDS
⅜″ PLYSCORD SHEATHING
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EXPOSURE 13⅞″
HORSEFEATHER (2″ WEDGE AT VERTICAL JOINT)
2″
15⅞″×48″ WELDTEX SIDING
①
WATERTABLE
2″×4″ STUDS
⅜″ PLYSCORD SHEATHING
WELDTEX SIDING 13⅞″ TO WEATHER MAXIMUM
CYPRESS FURRING STRIP ⅜″×1½″
SHINGLE
STRIP OF BLD'G. PAPER AT VERTICAL JOINT
EXPOSURE 13⅞″
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Detail 1 shows normal installation of Weldtex Siding. Detail 2 shows how simply and easily you can fair out the butt of the board to create a deeper shadow line, when desired.

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PRODUCTS

(*Continued from page 170*)

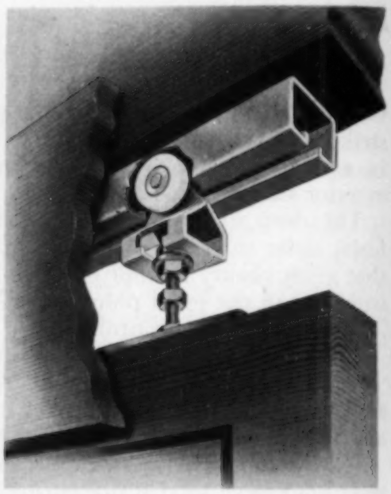
Electrically Conducting Glass

The new *Corning E-C Glass* reportedly has a transparent skin that conducts electricity, but resists enough to heat the glass up to 660 F. This skin is said to be a metallic oxide, about 16 millionths of an inch thick, applied to the glass at a high temperature. It is claimed to be more resistant to scratching or to chemicals than the glass itself. The glass can produce a wide range of temperatures depending upon the resistance of the film and the power of current used. The base material is the heat resistant *Pyrex* brand borosilicate glass. Specific articles will be sold under the Pyrex trade-mark.

Currently, a coffee percolator and radiant heaters are being made. The latter are primarily for industrial use. Future additions to the line may include such items as household appliances, water heaters, resistors, combination heating and lighting units, heat exchangers, and various types of space heaters and driers. Corning Glass Works, Corning, N. Y.

Sliding Door Hardware

The *Grant Silent Sliding-Door Hardware Series* feature nylon outer race ball bearing rollers to prevent noise transmission. There is said to be no metal to metal contact between stationary and moving hanger parts. The use of nylon is also claimed to assure longer track life.



Nylon rollers allow smooth, noiseless operation of sliding door hardware

There are two models available in the line: the *No. 1600* single track series for center-hung interior doors and bi-parting closet doors up to 1⅜ in. thick, and the *No. 1700* double track series for bi-passing doors. Three adjustable hanger types are offered. Minimum headroom requirements are said to be necessary for the installation of the hardware. Grant Pulley & Hardware Co., Broadway at 57th St., Woodside, N. Y.

Automatic Clothes Washer

The *Westinghouse Model L-5 Laundromat* features a built-in scale mechanism in the loading door to show the user the correct amount of hot water and soap needed to wash a given load of soiled clothes. The weight indicator for the scale is on the slanting front panel of the washer and has markings to correspond with the settings of a water control.

(*Continued on page 262*)

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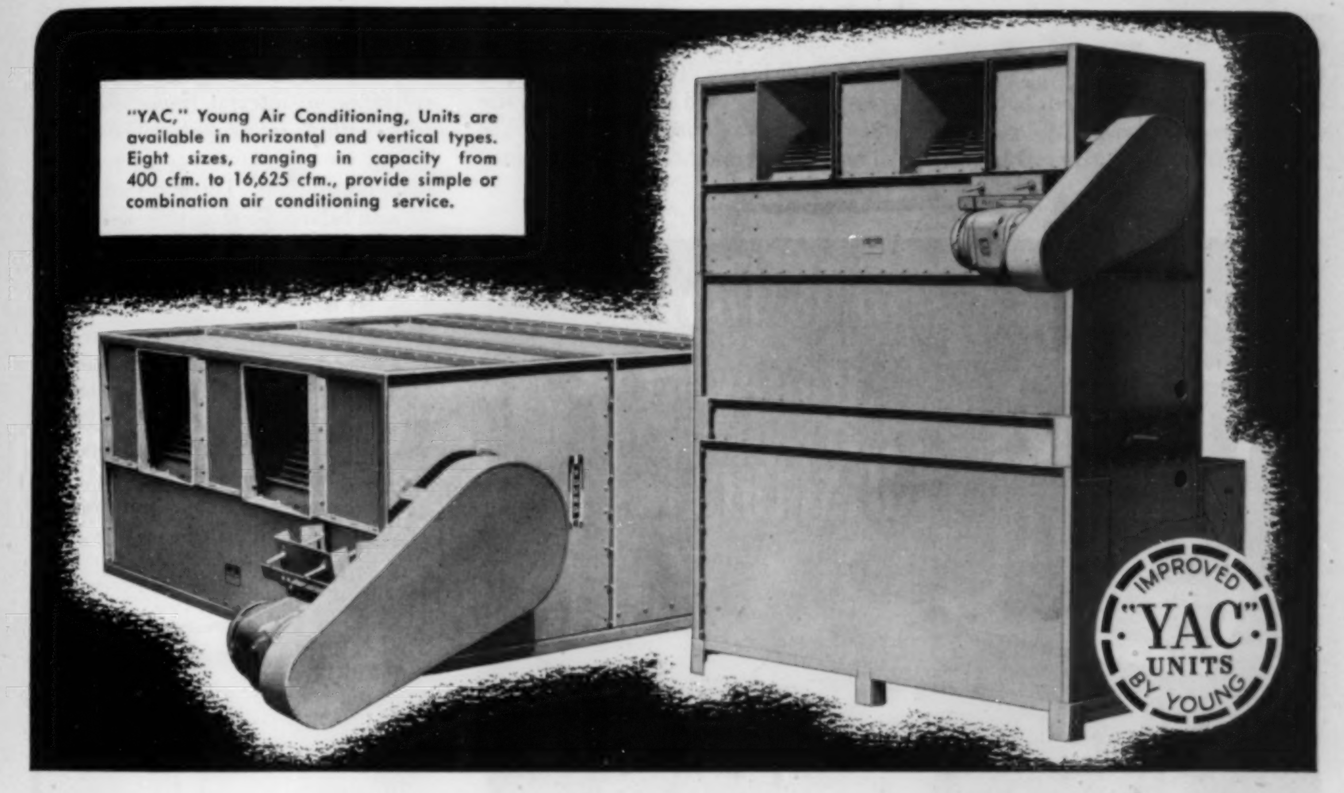

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PRODUCTS
(Continued from page 260)

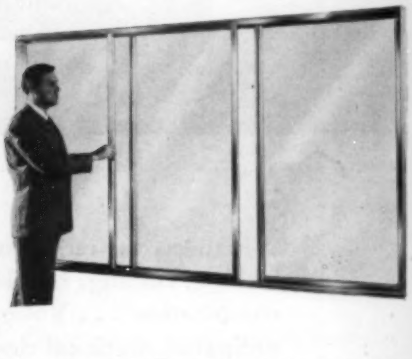
The latter varies the amount of water from 16 to 26 gal. An additional control dial determines water temperature and washing time. The machine automatically fills itself with water, washes, triple-rinses, spins garments to dry, cleans and drains itself, and shuts off. A new type snubber shoe is used to absorb vibration. The unit is powered by a 60-cycle, 115-volt, a-c motor, which is said to be lubricated for life. A limit control switch shuts the machine off under severe unbalanced load conditions. Westinghouse Electric Appliance Div., Mansfield, Ohio.

Apartment-Size Range

The small *Perfection Gas Range, Model 920*, was designed for use in apartments and small homes. The unit is equipped with one large and three standard size burners and an automatic lighter. The burner tray is said to be deep and easy to clean, the burners non-clogging. The roller drawer-type broiler has a special smokeless grid. The 16-in. oven features full insulation, non-tip oven racks, and automatic heat control. The range is adaptable for use with any type gas. Perfection Stove Co., 7609 Platt Ave., Cleveland 4, Ohio.

Horizontal Sliding Windows

The *Peterson Aluminum Window* combines an integral frame and fixed sash, with a sliding sash which is supported on two stainless steel rollers to open horizontally. There are said to be no sash balances, concealed sash springs, operating cranks or projecting hinges. Installation is claimed to be very simple, with no puttying or painting required. A high pile, woven weatherstrip is used to reduce friction, metal to metal contact and scratching. Sliding panels lift out for washing inside the room. Plastic screens cover the ventilating portion of the window. Storm sash panels are said to be easily installed in the aluminum extruded section from inside the room.



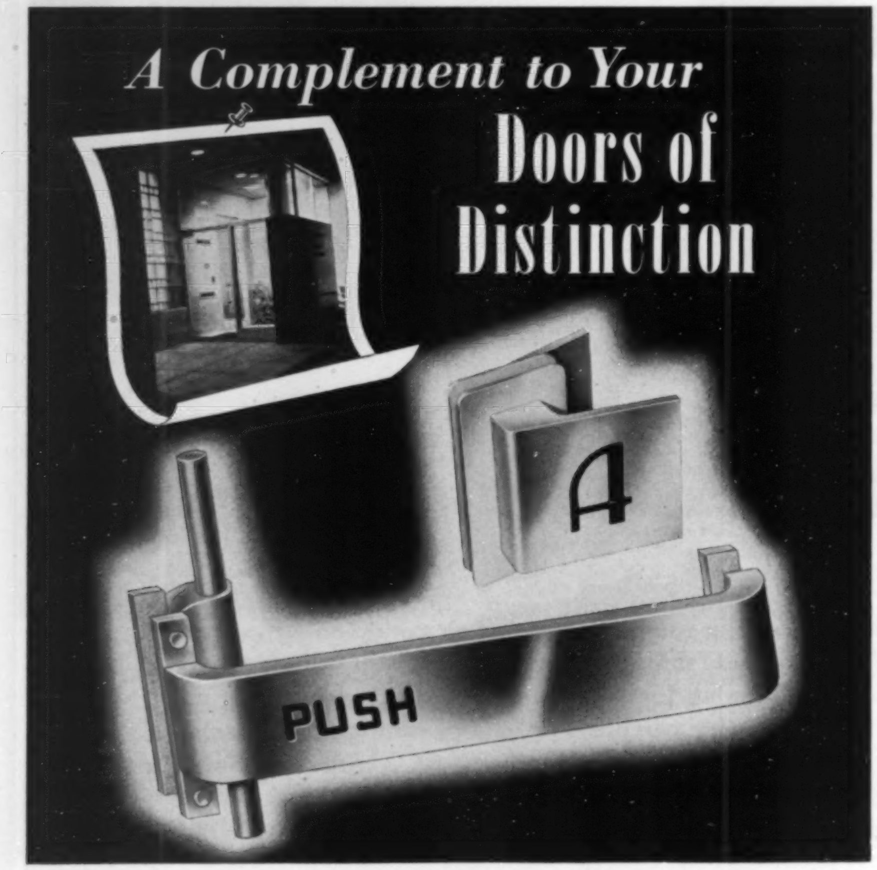
Center panel of packaged aluminum window slides open, uses no cranks or springs

A stainless steel plunger-type lock with friction control is used to secure the window in a closed position. The windows are available in a wide variety of standard and special styles and sizes. Peterson Window Corp., 20500 Mound Road, Detroit, Mich.

Refrigerator With Self-Sealing Magnetic Doors

A new *General Electric* two-door combination refrigerator and freezer features self-sealing magnetic doors. Plastic door gaskets lined with 1-in. Alnico magnets are said to allow the doors to close almost without a sound, and to form a tight, uniform seal with

(Continued on page 264)



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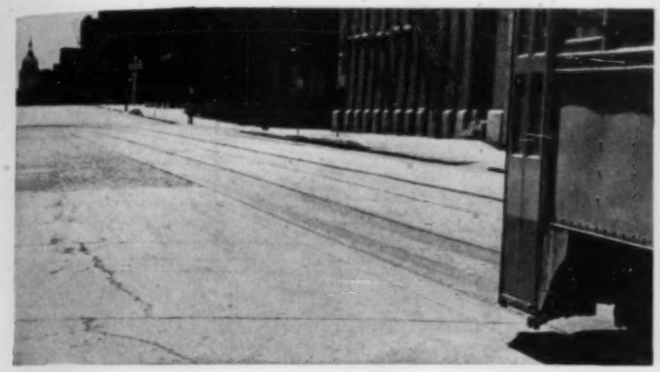

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this test paving was laid in Minneapolis—the first commercial use of Atlas Duraplastic air-entraining cement. Badly scaled background section was made with regular cement. Foreground concrete was laid at the same time with Duraplastic. Here are both sections, photographed ten years later, after ten severe winters, heavy applications of de-icing salts and many freezing-thawing cycles—convincing proof of Duraplastic concrete's lasting durability. Longitudinal structural crack shows some raveling. Note perfect transverse joint.

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Promontory Apartments, Chicago, Ill. Duraplastic used throughout in concrete columns 12 feet deep with network of steel bars and beams. No sign of water-gain or segregation. Contractors report a smooth surface free of blemishes or air bubbles. Architects: Mies van der Rohe; Pace Associates; Holsman, Holsman, Klekamp & Taylor; Structural Engineer: Frank J. Kornacker; Contractor: Peter Hamlin Construction Company—all of Chicago.

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With Duraplastic, less mixing water is needed for a given slump. The resulting mix is more plastic, more workable, more uniform and more cohesive. It's easy to place and finish. Water-gain and segregation are reduced. Surface appearance is improved and has higher resistance to the effects of weather-exposure.

For structural concrete needs of today and tomorrow, Duraplastic offers better concrete at no extra cost. It provides the precise amount of air-entraining agent interground with the cement for satisfactory field performance. It complies with ASTM and Federal Specifications, sells at the same price as regular cement and calls for no unusual changes in procedure.

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PRODUCTS

(*Continued from page 262*)

the cabinet. The fresh-food compartment door is said to close by itself when leveling screws under the front of the refrigerator are adjusted so that it is tilted slightly backwards. Both doors are opened by a slight pull on the handle. The fresh-food compartment is also equipped with a foot-pedal door opener. Other features include an improved ice-cube tray and a new rubber wheel mounting for fruit and vegetable drawers. The refrigerator will be available in 8- and 10-cu-ft models. Appliance & Merchandise Dept., General Electric Co., Bridgeport 2, Conn.

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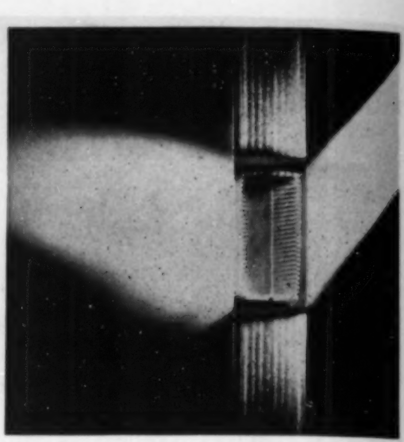
Insulux Light-Directing Glass Block No. 363 is claimed to accept more daylight under many conditions which were formerly considered unfavorable, and to diffuse daylight more uniformly to all portions of the room. A major portion of the available daylight is said to be directed toward the ceiling from where it is reflected downward onto work surfaces. The glass block, especially designed for school classrooms, is said to offer little surface glare when viewed from below normal eye level. This daylight control is accomplished by the addition of "azimuth-correcting" ribs on the outside and inside faces of the block; prisms on both inside faces direct the light upward. For use below eye-level, a companion block, *No. 365*, diffuses light in the vertical and horizontal planes. American Structural Products Co., Box 1035, Toledo 1, Ohio.



Ribbed glass block diffuses light toward ceiling. Light source shown at right

Aluminum Screen Frame

The *Kaiser Aluminum Screen Frame* is claimed to have a very neat appearance, and exceptional strength and ease of assembly. The frame may be used with shade screening or conventional wire cloth screen. It is assembled from framing sections measuring 15/16 in. wide by 9/16 in. thick; trim cover sections; and cast aluminum corners. Frame and trim sections are roll-formed from aluminum alloy. The trim cover slips over the spline and the selvage edge of the screening, and is held by grooves in the reverse of the frame section. No screws are said needed for assembly. With shade screening, the spline is used only at top and bottom. The cast aluminum corners, providing strength and rigidity, are held in frame sections by dimpled indentations. Sections for the frame are supplied in 15-ft lengths. Mullion assemblies, consisting of brace and cover, are available for very large windows. Kaiser Aluminum & Chemical Sales, Inc., 1924 Broadway, Oakland 12, Calif.

(*Continued on page 266*)

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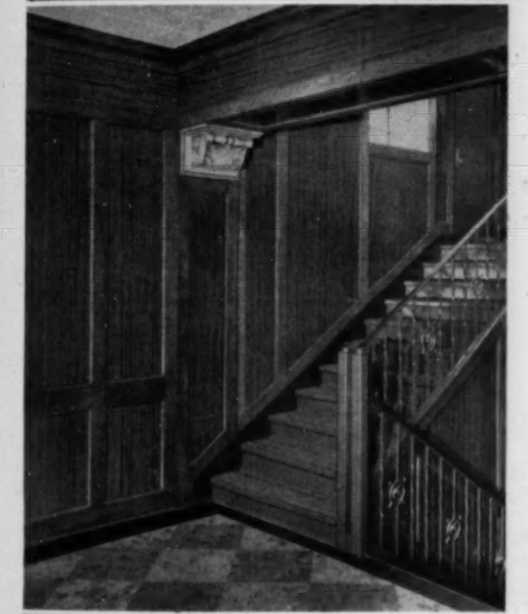

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Interiors in the beautiful new Elk's Club, New Philadelphia, Ohio, showing decorative possibilities of Marlite Wood Pattern wall panels.

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FOR CREATING BEAUTIFUL INTERIORS

PRODUCTS

(*Continued from page 264*)

Interlocking Building Block

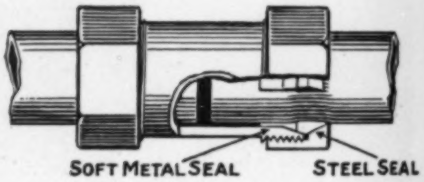
Hydro-Forged Stone building block is said to resemble cut-stone, granite or marble, and is made in a patented tongue and groove design within tolerances of five one-thousandths of an inch. When laid, these moulded stones are claimed to lock snugly into each other to form a wall of high strength. In order to insure against seepage of moisture, a mastic material, applied with a hand-operated gun is spread on the grooves as the blocks are assembled. No mortar is necessary.

The blocks are made from a number of materials, many of them normally considered waste. These include sand, oyster shells, iron ore waste, crushed brick, coal mine tailings, stone dust, flue ash and pumice. Solid colors or veined appearance may be achieved through the process of mixing the ingredients. No further finishing is said to be required.

The standard block measures 8 in. wide, 4 in. high and 16 in. long. They are hollow in the center, providing dead air space for insulation. The blocks are formed on a specially designed hydraulic press under 150 ton pressure, and are said to be accurate and uniform. Cost of materials and labor for erection is claimed to be less than for concrete block. Hydro-Forged Stone Associates, Inc., 434 Bulkley Bldg., Cleveland, Ohio.

Threadless Pipe Fittings

Threadless Union Fittings were designed to rigidly connect black or galvanized pipe, new or used, without any threading of the pipe ends. Installation is claimed to be quick and simple, with no need for pipe cutters, threading dies and other special tools; a hack saw and a monkey wrench are all that is required. The fittings are of steel with soft metal seals, manufactured in tees, couplings and elbows for use with ½ in. to 1½ in. pipe. To break into an existing line with the fittings, it is said to be necessary only to cut the line with a hack saw, part it ½ in., slip on a tee and tighten the sealing nuts. No removal of pipe is necessary. The units are said to be tested to pressures exceeding 2000 psi. Union Products Co., 54 S. Third St., Minneapolis 1, Minn.

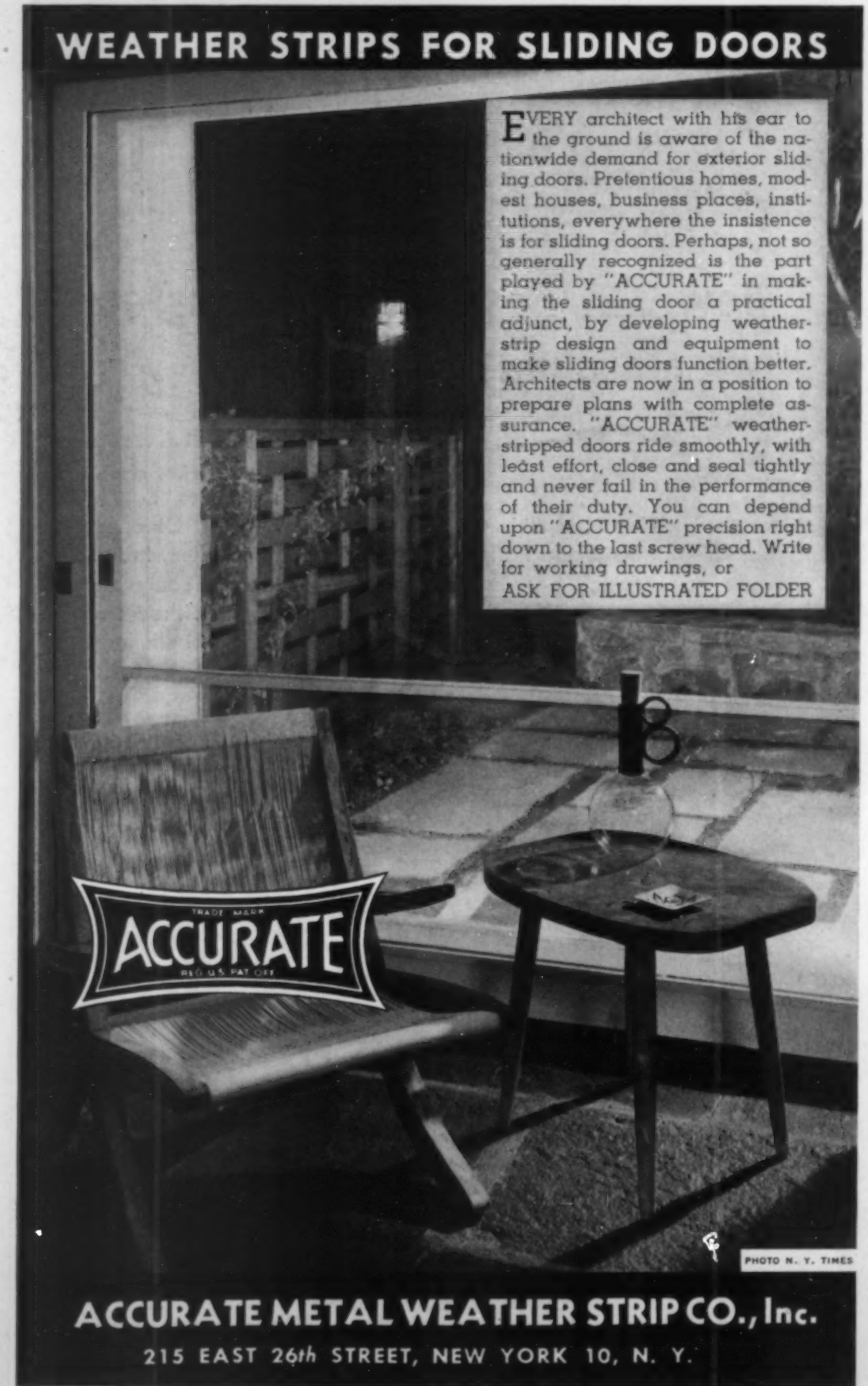


Threadless union simplifies installation and repairing of pipes and plumbing

Sidewalk Snow Melting System

Sidewalks around the new office building at 100 Park Avenue, New York City will have snow melting coils. Panels of ¾- and 1¼-in. steel pipe coils were embedded in the concrete sidewalk slabs. These are warmed by a mixture of prestone and water heated to 180 deg by steam in a closed system. Foam glass insulation and a vapor seal of tar

(*Continued on page 268*)


WEATHER STRIPS FOR SLIDING DOORS

EVERY architect with his ear to the ground is aware of the nationwide demand for exterior sliding doors. Pretentious homes, modest houses, business places, institutions, everywhere the insistence is for sliding doors. Perhaps, not so generally recognized is the part played by "ACCURATE" in making the sliding door a practical adjunct, by developing weatherstrip design and equipment to make sliding doors function better. Architects are now in a position to prepare plans with complete assurance. "ACCURATE" weatherstripped doors ride smoothly, with least effort, close and seal tightly and never fail in the performance of their duty. You can depend upon "ACCURATE" precision right down to the last screw head. Write for working drawings, or
ASK FOR ILLUSTRATED FOLDER

TRADE MARK ACCURATE REG. U.S. PAT. OFF.

PHOTO N. Y. TIMES

ACCURATE METAL WEATHER STRIP CO., Inc.
215 EAST 26th STREET, NEW YORK 10, N. Y.

Build Smokeless FIREPLACES without unnecessary supervision!

Compact Heatilator Unit insures correct construction*

With the growing shortage of skilled masons, are you spending too much time supervising fireplace construction?

Use a Heatilator Fireplace Unit, and insure a fireplace that draws properly and will not smoke.

The Heatilator Unit is a complete fireplace from hearth to flue, around which the decorative masonry is built. It consists of:

1. *A scientifically designed firebox*
2. *A properly proportioned throat to insure proper draft*
3. *A removable damper with adjustable poker control*
4. *Extra wide down-draft shelf made of heavy steel*
5. *Complete metal smoke dome to speed passage of smoke into chimney*

By providing these parts in one compact form, with no extra parts to buy or build, the Heatilator Unit permits unsupervised construction. It eliminates guesswork and other causes of failure.

Costs little, if any, more than ordinary fireplace

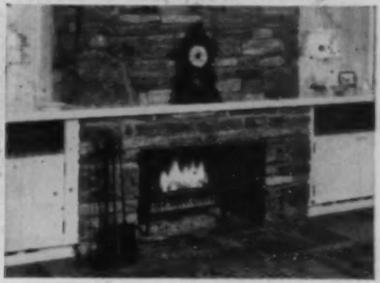
Because the Heatilator Unit is ready to install, it saves mason time and labor. It saves on expensive firebrick. *Thus, a completed Heatilator Fireplace costs little, if any, more than an ordinary fireplace!* In addition to this original economy, your client can count the dollars-and-cents savings of smokeless, trouble-free operation.

HEATILATOR UNITS ADAPT THEMSELVES TO ANY DESIGN

A Colonial Fireplace built around a Heatilator Unit. Warm-air grilles are located in the bookshelf sides.

Classic design, with the modern advantages of a Heatilator Fireplace Unit. Grilles are located at sides.

A Heatilator Fireplace is the only heating equipment needed for many Florida homes, like this one.



The grilles in this Northern fieldstone fireplace are hard to find. An example of ingenious design.

Heatilator Unit ups fireplace efficiency

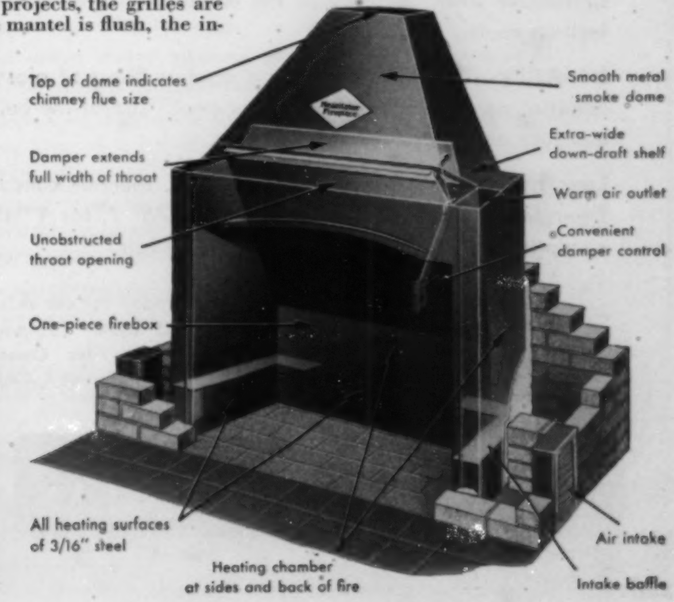
The Heatilator Fireplace draws in cool air from floor level, heats it, and circulates it to every corner of the room, and to other rooms as well. On cool Spring and Fall days, this use of heat ordinarily wasted makes furnace operation unnecessary. In mild climates, it is the only heating equipment needed. It saves the cost of expensive heating plants that are used only a short time each year.

Heatilator Fireplaces are ideal for summer camps and cabins, making them usable weeks longer in Spring and Autumn. It solves the heating problem in basement recreation rooms without unsightly pipes and radiators. Heatilator Units, made of boiler plate steel, are built for a lifetime.

A Heatilator Fireplace permits any architectural style and the use of any material. The air intake and outlet grilles are easily placed to blend with the general design. When the mantel projects, the grilles are out of sight. If the mantel is flush, the intakes can be placed in baseboards on either side of the hearth . . . outlets high above mantel, in ceiling, or in an upstairs or adjacent room.

Give clients the advantages of a Heatilator Unit.

Write today for complete information and illustrations showing the variety of architectural styles possible with Heatilator Fireplace Units. Heatilator, Inc., 616 E. Brighton Avenue, Syracuse 5, N. Y.


Top of dome indicates chimney flue size
Smooth metal smoke dome
Extra-wide down-draft shelf
Damper extends full width of throat
Warm air outlet
Unobstructed throat opening
Convenient damper control
One-piece firebox
Heatilator Fireplace
All heating surfaces of 3/16" steel
Heating chamber at sides and back of fire
Air intake
Intake baffle

**Heatilator is the reg. trademark of Heatilator, Inc.*

HEATILATOR

T.M. REG. U.S. PAT. OFF.

America's Leading

FIREPLACE

PRODUCTS

(Continued from page 266)

mopped over a layer of tar paper were used beneath the slabs. Steel pipe was said to have been used because it is economical, forms easily, welds soundly, and its expansion and contraction, for all practical purposes, may be considered the same as concrete. American Iron & Steel Institute, 350 5th Ave., New York 1, N. Y.

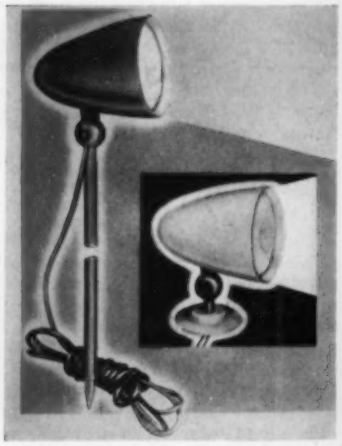
Underground Conduit Insulation

Designed for insulating underground conduits for steam lines, The *Z-Crete* system forms a solid covering of water repellent insulation which provides both the insulating medium and the necessary structural conduit in the same operation. This insulating concrete is cast in place on the job, with no structural joints or voids, and is composed of Portland cement, vermiculite aggregate, waterproofing admix and water, entirely wrapped in a waterproof envelope of three moppings of hot pitch and 2 layers of tar-saturated felts. The Z-Crete is said to be a resilient material, similar to dry wood, which can be sawed or worked with ordinary hand tools. It can be formed after all piping operations have been completed, and supported on Z-Crete blocks at suitable spacings. It is said not to be necessary ordinarily to provide for drainage. The Zonolite Co., 135 S. La Salle, Chicago 3, Ill.

Outdoor Floodlights

A new line of low cost outdoor floodlights, called *Moldcast*, have been introduced in aluminum alloy, finished in Lawn Green or Baked Aluminum outdoor enamels for house or garden use, or in natural aluminum for industrial use. The simple, bullet-shaped housings extend beyond the bulb for protection of the lamp, and are said to be weatherproof and corrosion resistant.

The home line includes a stake-mounted unit, a plate-mounted unit, and two additional types for permanent wiring installations. Extensions are available for the stake-mounted flood, so that the light can be brought up to a height of 12 ft.



New floodlights are available with either stake or plate mountings for outdoor use

The commercial or industrial line features two units with and without cover plate for permanent wiring installations. Par-38 bulbs, either flood or spot, are recommended for use with the floodlights — they are not supplied with the original units. Moldcast Products, Inc., 68 Clifford St., Newark, N. J.

(Continued on page 270)

JOB DATA ON ANOTHER FIBERGLAS* INSULATED ROOF

Building: General Electric Co. (Warehouse), Erie, Pa.
Architect: McGeorge and Hargett Co., Cleveland, Ohio
General Contractor: H. L. Platt Co., Erie, Pa.
Roofing Contractor: Central City Roofing Co., Syracuse, N. Y.
Roof Deck: Precast Concrete Slab
Roof Insulation: Fiberglas Roof Insulation 320,000 Sq. Ft. of ¾" thick material
Roofing: Tar and Slag

FOR TROUBLE-FREE ROOF INSULATION..SPECIFY FIBERGLAS

Modern design for the insulation of built-up roofs considers serviceability and durability as well as adequate protection against condensation and the passage of heat and cold. That's why Fiberglas Roof Insulation is winning the approval of architects everywhere.

Serviceability—Fiberglas Roof Insulation is specifically designed and manufactured for roof insulation purposes. It provides a firm, structurally sound material as the underlying layer of insulation in built-up roofs.

Durability—Dampness will not rot ageless fibers of glass, the core material, nor cause them to shrink or swell. Life-of-the-building permanency of the insulation is assured.

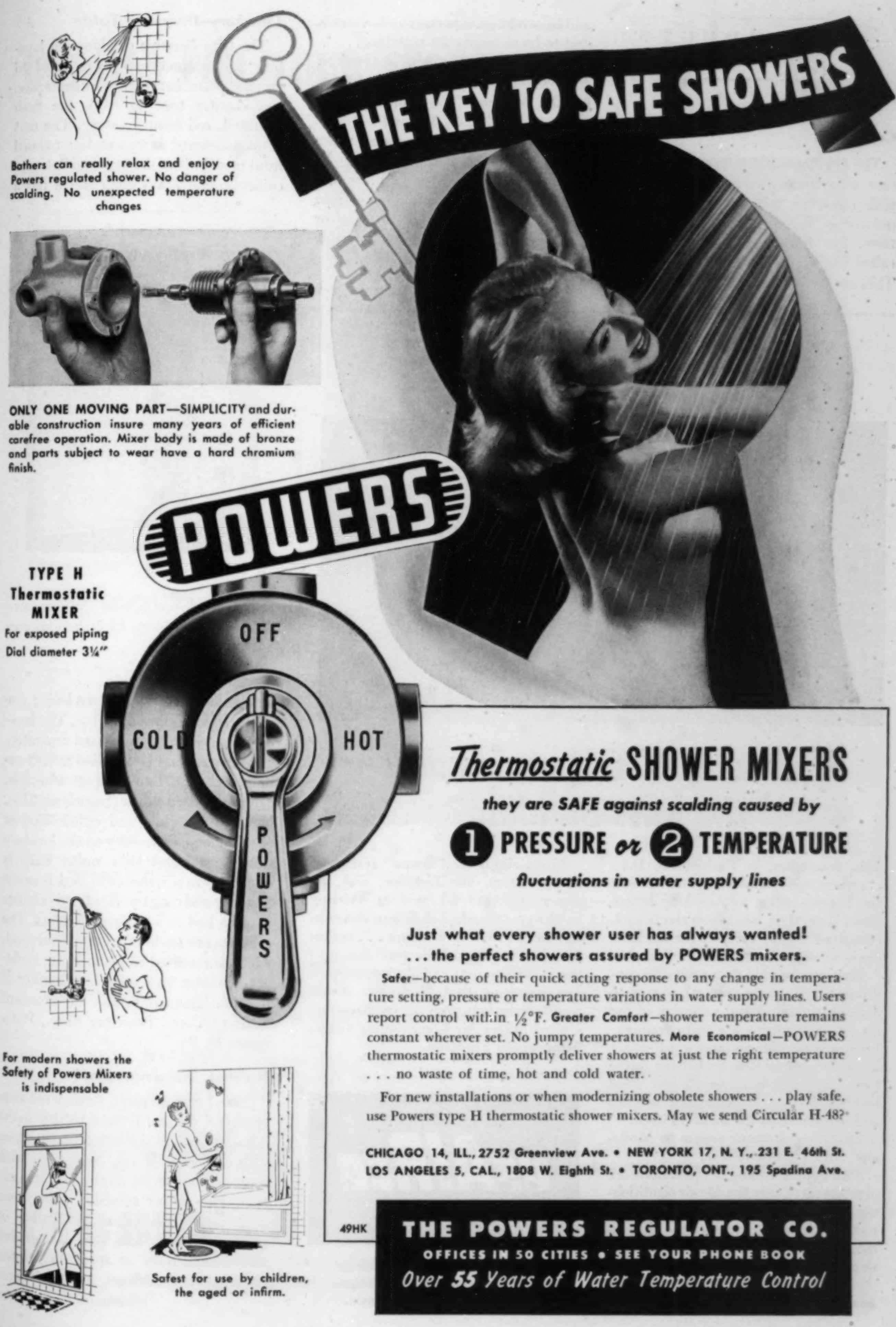
Low Heat Conductance—For example, thermal conductance of Fiberglas Roof Insulation is 0.25 Btu at 75° F. for 1" thickness—exceptionally low for roof-insulating materials.

For further information also write us today for our A.I.A. File No. 37 "The Design of Insulated Roofs" (36-page manual) or refer to Sweet's Architectural Files. Owens-Corning Fiberglas Corporation, Dept. 68-F, Toledo 1, Ohio.

*FIBERGLAS is the trade-mark (Reg. U. S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.

OWENS-CORNING
FIBERGLAS
BUILDING MATERIALS

BUILDING INSULATION • ACOUSTICAL TILE • ROOF INSULATION • MEMBRANE FABRIC



Bathers can really relax and enjoy a Powers regulated shower. No danger of scalding. No unexpected temperature changes

ONLY ONE MOVING PART—SIMPLICITY and durable construction insure many years of efficient carefree operation. Mixer body is made of bronze and parts subject to wear have a hard chromium finish.

TYPE H
Thermostatic
MIXER
For exposed piping
Dial diameter 3¼"

For modern showers the Safety of Powers Mixers is indispensable

Safest for use by children, the aged or infirm.

Thermostatic SHOWER MIXERS

they are SAFE against scalding caused by

① PRESSURE *or* ② TEMPERATURE

fluctuations in water supply lines

Just what every shower user has always wanted!
. . . the perfect showers assured by POWERS mixers.

Safer—because of their quick acting response to any change in temperature setting, pressure or temperature variations in water supply lines. Users report control within ½°F. **Greater Comfort**—shower temperature remains constant wherever set. No jumpy temperatures. **More Economical**—POWERS thermostatic mixers promptly deliver showers at just the right temperature . . . no waste of time, hot and cold water.

For new installations or when modernizing obsolete showers . . . play safe, use Powers type H thermostatic shower mixers. May we send Circular H-48?

CHICAGO 14, ILL., 2752 Greenview Ave. • NEW YORK 17, N. Y., 231 E. 46th St.
LOS ANGELES 5, CAL., 1808 W. Eighth St. • TORONTO, ONT., 195 Spadina Ave.

49HK

THE POWERS REGULATOR CO.
OFFICES IN 50 CITIES • SEE YOUR PHONE BOOK
Over 55 Years of Water Temperature Control

PRODUCTS

(*Continued from page 268*)

Carpeting

The new *Couturier* nylon carpets feature three relief design elements and plain carpeting, which may be custom-tailored to individual design specifications. The three random patterns are called Elipse, Leaf and Chinese Cloud. They are woven in 27- and 36-in. widths, and have a 36-in. repeat. No allowance is said to be necessary for matching.

The carpeting is available in 10 colors. Any combination of these is available for the patterns. The plain carpeting comes in 15-ft, 12-ft, 3-ft and 2-ft-3-in. widths. The pattern strips and wider widths of plain carpeting may be divided into various widths for the desired tailoring. The nylon is said to be long wearing, easy to clean or wash, soil resistant, non-inflammable and moth proof. Nye-Wait Co., Inc., Auburn, N. Y.

Lavatory-Dressing Table

The trim *Dresslyn* combination lavatory and cabinet unit is designed to provide extra bathroom storage space, and counter tops to flank the flush mounted, roll front lavatory. The unit is manufactured in two styles: a closed front model with 2 drawers and 3 storage cabinets; and a variation which has a knee-hole vanity section replacing one of the storage compartments. The lavatories may also be purchased separately for single or dual installation in custom-built counters. Two sizes are available.

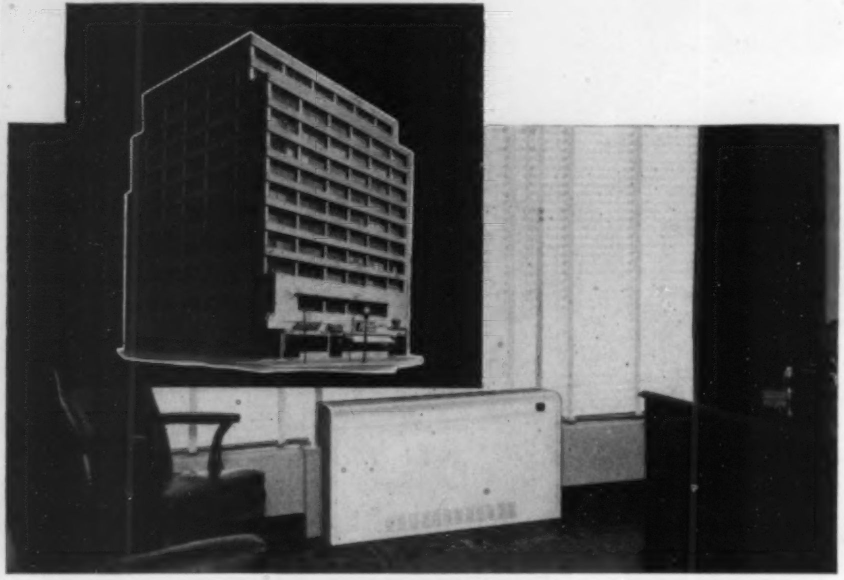
Treated-hardwood cabinet provides counter and storage space for built-in lavatory

The standard cabinet models are 31 in. high, 16 in. wide, and either 58½ or 62¼ in. long, depending on the lavatory size. A stainless steel union strip is said to form a water-tight seal between lavatory and counter. Bowl and cabinets may be had in a variety of colors. The cabinets are made of treated hardwood, which is reported to be moisture resistant. Counter tops come in a variety of plastics. American Radiator & Standard Sanitary Corp., Bessemer Bldg., Pittsburgh 22, Pa.

Rubber Emulsion Paint

Satin Luminall paint, formulated with synthetic rubber, is said to dry in 20 minutes, and to cover interior surfaces with one coat. It can be washed with soap and water 30 days after application. The rubber emulsion paint thins with water, one quart per gallon of paste emulsion, and can be applied with brush, roller or spray to painted or unpainted surfaces, plaster board,

(*Continued on page 272*)



How would YOU air condition the Kass Building?

This, remember, is Washington, D.C. . . . where mid-summer weather can wilt the bravest office worker long before noon. How, then, would *you* assure cool, refreshing all-day comfort for the hundreds of offices in the Kass Building?

First, you need high-capacity air conditioning, of course. Second, you need individual control and variation of the air for each room—not mere zoning—because some of these large windows are in shade while others are getting direct sun. Third, you want an efficient, good looking system—as compact, modern and attractive as the building itself.

Every requirement points to Modu-aire. And Modu-aire it is.

Slim copper tubing is the framework of this marvelously flexible air conditioning system. Through tubes, concealed in walls, each tenant receives the ingredients for the very kind of weather he wants at any given moment. Big ducts—clumsy, unsightly, unsanitary—are gone forever!

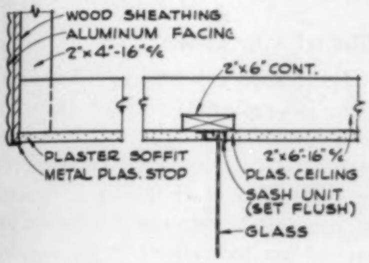
Modu-aire is the "dream" system of the architect, the installer, and the owner—whether for new or existing buildings. It cools and dehumidifies in summer . . . heats in winter . . . makes friends every day of the year. Scores of fine buildings, here and abroad, are now demonstrating that Modu-aire is the *world's most luxurious air conditioning!* United States Air Conditioning Corp., Minneapolis 14, Minn.

usAIRco

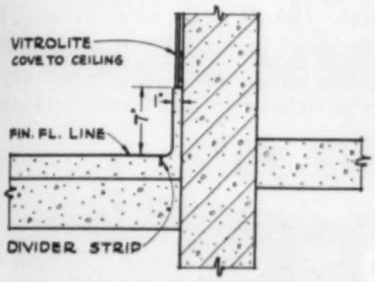
Engineers and manufacturers of air conditioning refrigeration, unit heaters, coils and ventilating equipment.

DETAILS FOR YOUR STOREFRONT FILE

VISUAL FRONT


WOOD SHEATHING
ALUMINUM FACING
2"x4"-16" o/c
2"x6" CONT.
PLASTER SOFFIT
METAL PLAS. STOP
2"x6"-16" o/c
PLAS. CEILING
SASH UNIT (SET FLUSH)
GLASS

A-A Canopy and window head.


VITROLITE COVE TO CEILING
1"
7"
FIN. FL. LINE
DIVIDER STRIP

B-B Base, showing *Vitrolite* wall.

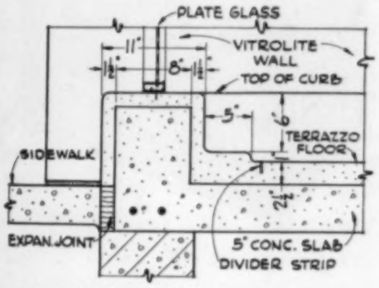
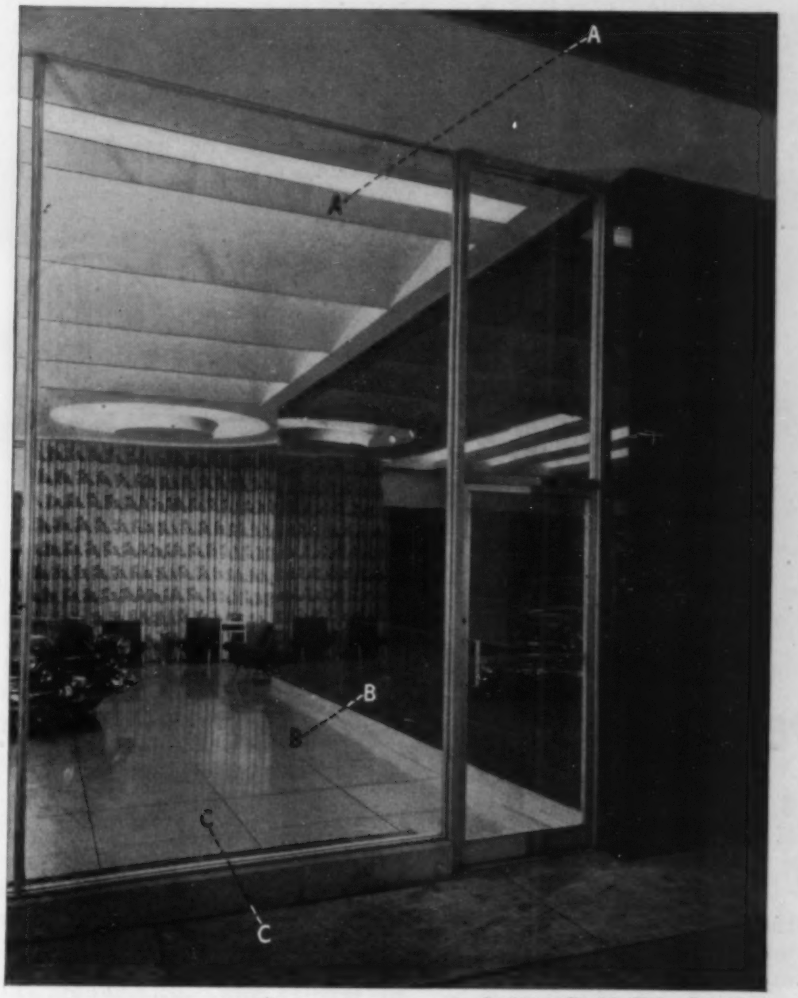
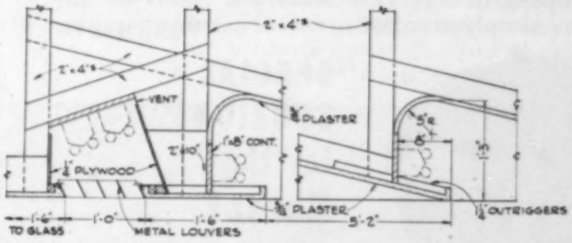


PLATE GLASS
11"
1½"
8"
1½"
VITROLITE WALL
TOP OF CURB
5"
6"
TERRAZZO FLOOR
SIDEWALK
2"
EXPAN. JOINT
5" CONC. SLAB
DIVIDER STRIP

C-C Bulkhead. Plate glass extends along bulkhead to *Vitrolite* wall.



Architect: Karl B. Hoke, Toledo


2"x4"s
2"x4"s
VENT
⅜" PLASTER
5" R.
8"
1'-3"
2"x10"
1"x8" CONT.
¼" PLYWOOD
⅜" PLASTER
1¼" OUTRIGGERS
1'-6" TO GLASS
1'-0"
METAL LOUVERS
1'-6"
5'-2"

Ceiling
Lighting
Details

INVITATION TO ENTER. The principle of the Visual Front—to make it easy for people to see into a store—is effectively carried out in this auto showroom. Clear Plate Glass is used expansively to permit a full view from many angles.

The large window is butted against a mahogany *Vitrolite** wall. Note that the *Vitrolite* extends back through the plate glass window. This carries the eye inside, creating an illusion of being inside the showroom even when outside. *Vitrolite* adds a wall of color that doesn't fade—doesn't need refinishing.

Write for our Visual Fronts book, which explains many interesting uses of glass in storefronts.

*®

LIBBEY · OWENS · FORD

6665 Nicholas Building, Toledo 3, Ohio

PRODUCTS

(*Continued from page 270*)

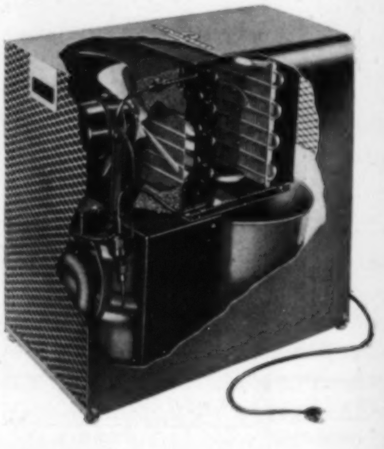
wall board, plaster, concrete, primed wood and metal. A gallon of paint is said to cover up to 700 sq ft on previously painted surfaces. It is available in 20 standard colors, and is claimed to be non-inflammable and non-toxic. Luminall Paint Div., National Chemical & Mfg. Co., 3617 May St., Chicago 9, Ill.

Mechanical Curtain Operator

A tiny, fully-enclosed electrical motor, the *Vallen Midget Curtain Operator*, has been developed for home use to move large or heavy curtains along a special heavy duty, double track. The motor is actuated by a push button which may be located at any convenient spot. Draperies may be stopped while traveling in either direction and may also be reversed at any point of travel. Once installed, the operator is said to require no further attention, and to insure tautness of the cable at all times. A built-in protective device is claimed to prevent the possibility of fire or damage to the motor or drapery. Operation is reported to be silent and smooth, and permits an overlapping of the drapery at the center for privacy. Vallen, Inc., Akron, Ohio.

Electric Air Drier

The compact *Kelvinator Electric Air Drier* is produced for either household or commercial use in closed areas where excess moisture may cause discomfort or property damage. The unit is also said to cause faster drying of clothes and rapid dehumidification of home laundries overloaded with moist air. The air drier is made of steel, finished in gray enamel. It measures 12½ in. wide, 20⅛ in. high, and 21¾ in. long. It may be connected to any 115-volt a-c electrical outlet. Major parts of the unit are a refrigerated drier coil, finned condenser, sealed refrigerating unit, fan and motor and removable 10-qt water container. A hose connection to a remote drain may be employed if facilities permit. Kelvinator Div., Nash-Kelvinator Corp., 14250 Plymouth Rd., Detroit 32, Mich.



Compact new air drier will operate on any standard 115 volt electric outlet

Metal Louvers

A new system of industrial and commercial building louvers, called *Airlouver*, is claimed to have extreme sturdiness to resist the distortion effect of heavy air flow conditions. The heavy duty frame and overlapping blades, said to be weather proof in both open and closed positions, are fabricated in sizes ranging from 11⅞ by 12 in. to 74¾ by

(*Continued on page 274*)

OPEN and CLOSE the GARAGE DOOR by RADIO CONTROL

Here is practical, time-proved equipment that offers convenience and protection comparable in importance to other home utilities. The driver opens or closes the garage door by simply *pushing a button in the car.* Our new model E Electronic unit operates on frequencies assigned by FCC for this service. Cost is *very moderate.* Can be installed in new or existing garages.

"SPECIAL SECTIONS" for the Barcol OVERdoor

The Barcol OVERdoor — an *improved* overhead garage door — lends itself admirably to an almost limitless variety of decorative treatment. Consider this interesting example, which even includes curtains in the windows! For details and advice, consult your Barcol representative.

The Only Manufacturer of **ALL THREE**

Barber-Colman Company alone offers: (1) Overhead Garage Doors, (2) Electric Door Operators, *and* (3) Radio Control for Garage Doors — together with single-source, skilled installation and service by factory-trained men.

FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES in PRINCIPAL CITIES

BARCOL

BARBER-COLMAN COMPANY

102 MILL ST. • ROCKFORD, ILLINOIS

Specify savings— specify adhesive-set clay tile!

3M Ceramic Tile Adhesive goes on any dry-wall foundation

Where do clay wall tile take more of a beating than in a school washroom? More repeated washings? More punishment than from sky-larking school kids?

The architect on the remodeling of the Cedar Knolls School, Cedar Knolls, N. J., had these service conditions in mind when 3M Ceramic Tile Adhesive was used in the washrooms.

He specified "3M" knowing that this synthetic rubber base, oil-free adhesive remains resilient to absorb shock and impact—no save-at-any-cost substitute but a quality product, worthy of the finest building.

FLOATING TILE on walls with 3M Ceramic Tile Adhesive, Cedar Knolls School. Tile can be set faster; there's less cleanup needed than when mortar is used—further savings which enable the contractor to quote for less.

QUALITIES YOU GET WHEN YOU SPECIFY 3M CERAMIC TILE ADHESIVE

VERSATILITY—Brown coat or putty coat plaster, plasterboard and plywood are suitable foundations for adhesive-set tile, *even in shower areas.*

STRENGTH—Adhesive test bonds resist shear forces up to 190 psi; *still are not totally destroyed.*

LASTING RESILIENCY—3M Ceramic Tile Adhesive is a synthetic rubber base adhesive *which contains no oils to dry out.*

WRITE TODAY for full information on this and other cost-cutting, quality 3M Building Adhesives—for all types of wall and floor covering materials.

3M
ADHESIVE

3M
BRAND
BUILDING
ADHESIVES

Made in U.S.A. by MINNESOTA MINING & MFG. CO., ADHESIVES AND COATINGS DIV., 411 Piquette Ave., Detroit 2, Mich. Also makers of "Scotch" Brand Pressure-sensitive Tapes, "Scotch" Sound Recording Tapes, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-Slip Surfacing, "3M" Abrasives. General Offices: Saint Paul 6, Minnesota. General Export: Durex Abrasives Corp., New Rochelle, N. Y. In Canada: Canadian Durex Abrasives, Ltd., Brantford, Ontario.

PRODUCTS

(*Continued from page 272*)

48 in. By varying the number of blades used, and cutting the frames to suit width requirements, it is claimed that any size wall opening can be fitted with a pattern of equal-size units. The louvers are made in adjustable and fixed types, the former operated by any of several optional methods. Galvanized steel is the standard material used, but fabrication can be of copper, aluminum, monel or A.P.M. The Swartwout Co., 18511 Euclid Ave., Cleveland, Ohio.

Window Sills

Bettinger porcelain enameled steel window sills have been developed to provide an acid-resisting permanently finished sill for bathrooms and kitchens. The units can be produced in almost any color desired and according to any specification. The manufacturers claim that they can be fabricated in virtually any size or shape. Features cited include economy, strong fade-proof colors, and resistance to weather and stain. The company provides personalized service in the production of standard porcelain enamel materials or step-by-step development of new applications. Bettinger Enamel Corp., Waltham, Mass.

Electric Clothes Drier

The low-voltage tumble-action *Frigidaire Drier, Model TJ-61,* is said to operate on 115 volts as a plug-in appliance for any standard household electrical outlet, eliminating the extra cost of installation in homes not having 220-volt systems. The manufacturers claim that such a drier became practicable as the result of high water extraction efficiency afforded by the high-speed tub spin of the Frigidaire clothes washer, companion product to the drier. The unit is housed in a counter height cabinet, and includes a timer, 1400 watt, 115 volt heating element, appliance cord, and a revolving drum for tumbling clothes dry. Frigidaire Div., General Motors Corp., 300 Taylor, Dayton 1, Ohio.

Light-Weight Roofing

The *Aluma-Life Roof* utilizes aluminum foil between cotton gum base layers, and a finish coating of light-colored marble or granite chips to form a roofing that is said to be lightweight, lifetime, hail-proof, hurricane-proof, insulated and fade-proof. The roofing is designed for bonding directly to wood sheathing, and is claimed to have excellent fire-resisting qualities. Insulating values are derived from the reflective qualities of the aluminum foil and the

Light-colored marble chips over aluminum foil forms lightweight roofing with good reflective insulation values

(*Continued on page 276*)

. . . To blend in with functional design

How frequently do you find yourself limited in your recommendations by conflict in design? To assist architects in overcoming this obstacle, TelAutograph Corporation engineers have designed the new TelAutograph telescriber Model "C" to blend in with arrangements from the simplest to the most radical.

Growing demand by business and industry for the certainty and control assured by TelAutograph telescriber handwritten communication formerly presented the problem of fitting the telescribers into surroundings which were in discord with the telescriber shape. The Model "C" by its fluid and graceful appearance eliminates this problem and at the same time offers an instrument which adds color and interest to its environment.

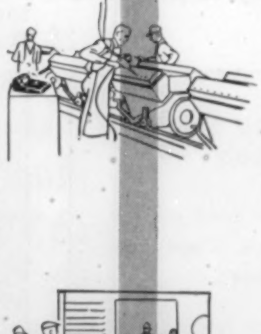
In addition, the new telescriber Model "C", by the refinements made in its operational design, allows a greater scope of application for handwritten communication.

Literature, photographs and technical data are available upon request. Kindly address your letters to Department A-3.

TELAUTOGRAPH CORPORATION

16 West 61st Street, New York 23, N. Y.

"Handwritten Messages Deliver Themselves . . . While You Write"



WHATEVER YOU NEED IN AN ELECTRICAL RACEWAY . . . .

Safety

Strength of Steel

Unbroken Corrosion Resistance

Economy

YOU GET WITH **ELECTRUNITE** E. M. T.

There are many reasons for specifying that wiring be enclosed in raceways of Republic ELECTRUNITE E.M.T.—the *original* lightweight rigid steel wiring raceway. Some of them are shown above.

Threadless ELECTRUNITE E.M.T. is approved by the National Electric Code and most local codes for exposed, concealed and concrete pan construction. It is easy to install in all locations—tight spaces between pans or narrow partitions. Every coupling and box connection is attached to the tube without disturbing the zinc coating. With today's demand for more and more outlets in offices, homes and factories, the ease of installation and economy of Republic E.M.T. will help meet these requirements within your client's construction budget.

Your nearest Steel and Tubes Division representative will be glad to outline all of the money-saving advantages of modern ELECTRUNITE E.M.T. Or, if you prefer, write today to:

REPUBLIC STEEL CORPORATION
STEEL AND TUBES DIVISION • CLEVELAND 8, OHIO
Export Department: Chrysler Building, New York 17, N.Y.

SEE SWEET'S FILE
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Republic
REPUBLIC STEEL
ELECTRUNITE E.M.T.

LIGHTWEIGHT THREADLESS RIGID STEEL RACEWAY

PRODUCTS

(*Continued from page 274*)

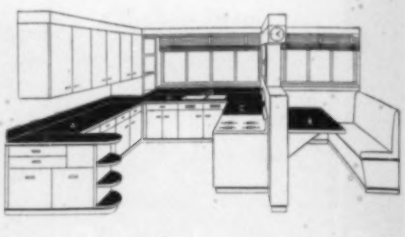
light-colored mineral chips. The foil also acts as a vapor seal.

The bonding agent is a vegetable gum sealer made from cotton rubber and asbestos fibers. It is reportedly not affected by acid fumes or salt air; will not crawl, slip, crack, blister or bleed; and can be coated for finish in any color. The roofing is said to eliminate the need for felts and metal flashing on chimneys and valleys. Aluminum Building Products, Inc., Route 1, Atlantic Blvd., Jacksonville, Fla.

New Micarta-On-Plywood Panel Sizes

A new range of sizes of *Micarta-on-plywood* panels is designed to eliminate waste. Sizes are included for various applications: 48 by 96 in. for walls, wainscots and general use; 30 by 96 in. for counterfronts, wide counter tops, sink tops with back splashes; 30 by 60 in. for table and built-in dinette tops; and 24 by 96 in. for counter tops.

The panels use Micarta, a high pressure plastic laminate, factory-glued to ¾-in. plywood panels. The bond is said to be guaranteed waterproof. Exterior grade rotary cut Philippine Mahogany *Weldwood* is used for the core. A backing sheet balances the construction for stability. The panels can be sawed, planed or drilled with ordinary tools. Edges may be treated with snap-on metal moldings, wood strips, or sealed with wood filler and stained or painted. United States Plywood Corp., 55 W. 44th St., New York 18, N. Y.



Kitchen counter tops employ convenient new sizes of micarta-on-plywood surfacing panels: A is 30 by 96 in.; B is 30 by 60 in.; C is half of a 24 by 96 in. panel

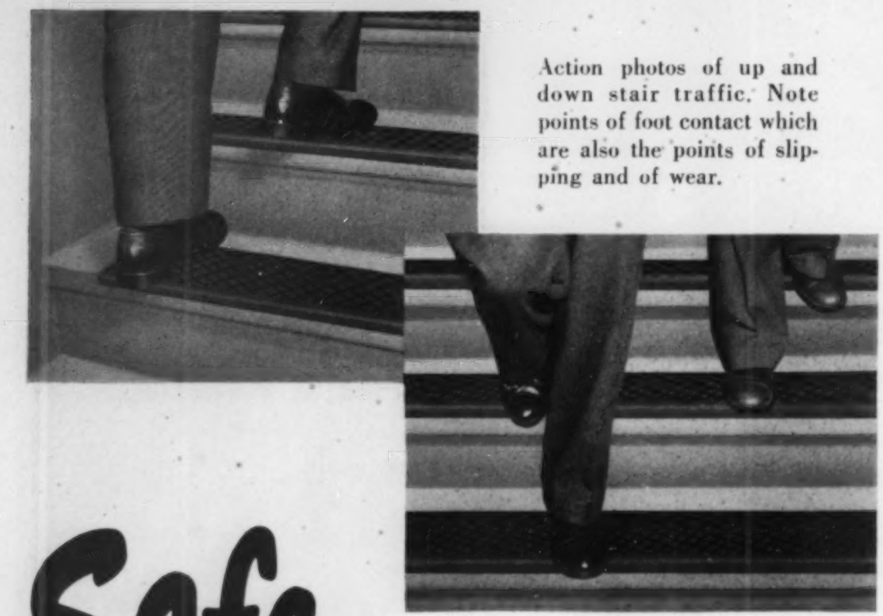
Electric Heater

The electric *Quickheter* is being produced in a new model with a built-in switch permitting the use of thermostatic control where desired. The wall unit combines radiant and convection heating. It is recommended as an auxiliary or emergency heater for bathrooms, nurseries, bedrooms, etc. The heaters are 21 in. high, 3½ in. deep, and either 9 or 19 in. wide. Units are available for 120 or 240 volt service. The enclosing box is of 16 gage galvanized steel, with chromium finish front, and stain-resistant steel heat reflector. Heating elements are Nichrome wire. An air space behind the reflector prevents overheating of wall and provides additional air circulation. Frank Adam Electric Co., 3650 Windsor Place, St. Louis, Mo.

Vinyl Carpeting

The new *Arrazin* carpet is said to be made of a tough vinyl plastic over a layer of cellular rubber. The carpeting is designed for use in stores, theatres, hotels, etc., where floors are subject to constant heavy traffic. It is claimed to

(*Continued on page 278*)



Action photos of up and down stair traffic. Note points of foot contact which are also the points of slipping and of wear.

Safe GOING UP and DOWN

Feralun* Safety Treads are made to protect *all* "danger spots" from slips and wear

As the illustrations show, feet hit different parts of a stair tread when walking *up*—and walking *down.* A glance at any worn stairway will show the results of this "up and down" wear.

Feralun treads are made to provide full protection from this "double traffic" all stairways must serve. They always have abrasive granules in the nosings—for the *down* traffic, and should be wide enough (at least 4") to protect the *up* traffic as well.

Not only do these sturdy cast iron abrasive treads give underfoot safety *up* and *down,* but they also give protection from wear as well. Installations of Feralun treads are still giving maintenance-free safety after more than a quarter century of continuous use.

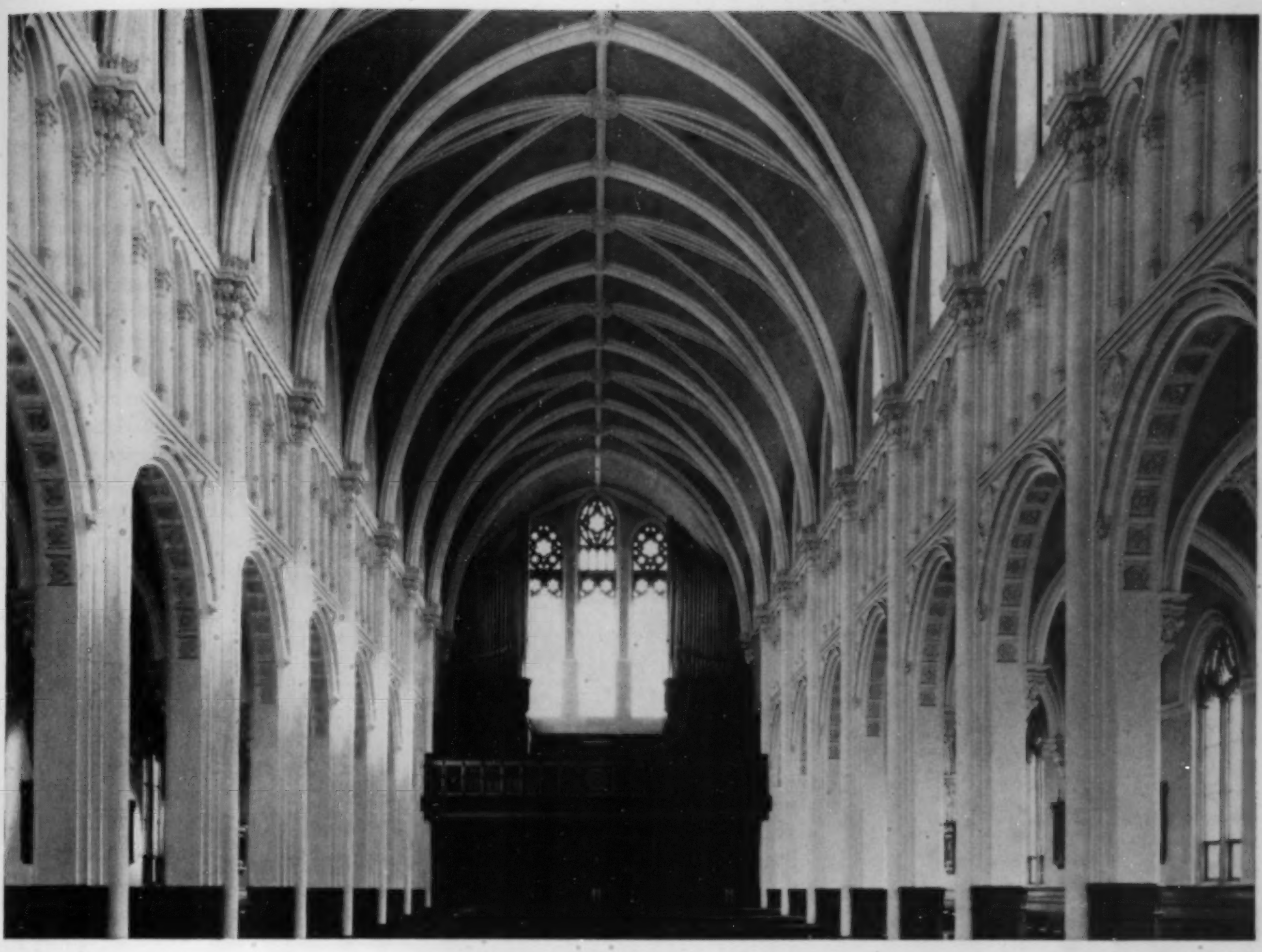
For full information on Feralun and other underfoot safety products, see Sweet's File, Architectural, Sec. $\frac{13a}{10}$, or write to:

AMERICAN ABRASIVE METALS CO.

463 Coit Street • Irvington, New Jersey

*Reg. U. S. Pat. Off.

USE FERALUN TREADS AND BE SAFE . . . "DOWN AND UP"



Architect's Traditional Design faithfully preserved with Gold Bond Plaster!

NOWADAYS, with the trend toward modernistic churches, it's a pleasant relief to see this fine example of traditional style. Actually, this beautiful edifice is as exquisite in detail as a painting by one of the great masters.

An achievement indeed for the architect but no less an achievement for the general contractor and plastering contractor who executed the design to the most minute detail.

Gold Bond Building Products played a part too—Gold Bond Metal Lath, Plaster and Super-White Moulding—the latter product for the arches and ornamentation.

There is a definite advantage to the architect when Gold Bond products are specified and used exclusively. The entire responsibility for all these materials is centered in one reliable manufacturer, National Gypsum Company. There are now over 150 trade-marked Gold Bond building materials, scientifically engineered to give the utmost in satisfactory results. They are fully described in Sweet's.

NATIONAL GYPSUM COMPANY, BUFFALO 2, NEW YORK

Fireproof Wallboards, decorative Insulation Boards, Lath, Plaster, Lime, Sheathing, Wall Paint, Rock Wool Insulation, Metal Lath and Sound Control Products.

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Architect .... *P. J. O'Connell, Boston, Mass.*
General Contr. .... *Patrick F. Beresford, Medford, Mass.*
Plastering Contr. .... *James H. Boyle & Son, Cambridge, Mass.*

You'll build or remodel better with Gold Bond

PRODUCTS
(*Continued from page 276*)

be attractive, comfortable, and highly durable, with resistance to abrasive wear, chipping, cracking or buckling, if properly installed. The carpet is also said to be easy to maintain, sanitary, and the non-porous surface resistant to oil, grease and food stains. The sponge rubber base is claimed to impart great comfort and quiet in busy areas. The carpeting is available in ten colors. B. F. Goodrich Flooring Div., The Hood Rubber Co., Watertown, Mass.

Television Projector

A new television unit, called the *Norelco Duo-Vue,* projects the TV image on a home-movie screen or white wall, for a picture 3 ft high by 4 ft wide. The unit consists of a low wooden cabinet, 26½ in. wide, 20 in. deep and 23½ in. high, which houses a *Protelgram* optical system, auxiliary chassis and other necessary components. It is used with almost any standard table model direct-view TV receiver, which is placed on top of the unit. Connections are provided for attachment. When operated on direct-view, the unit serves as a base for the table model receiver. To produce the large image, the unit is pulled out about 9 ft from the wall on concealed ball bearing rubber casters. A switch changes over from direct-view to projection. Focusing is accomplished by adjusting distance from the wall. Individual components of the system are available for custom installations. The pictures are said to be easily viewed at distances of 5 to 30 ft, and to be free from tube-face distortion and room light reflections. North American Phillips Co., Inc., 100 E. 42 St., New York, N. Y.

Roofing Cant Strip

A new product in the *Celotex* line of roofing materials is a low cost *Cant Strip* for roof and parapet wall junctions. The strip has a truncated triangular section, extending 4 in. up the wall and 4 in. over the roof deck. The cut-off right angle corner is said to permit a snug fit to wall and deck by allowing space for asphalt, mortar or other material which accumulates along the angle. The strip is of fiber board, coated on all surfaces to reduce danger of moisture absorption. It is said to be lightweight, strong, easy to handle and cut, and protected from attack by termites, dry rot or fungus growth. It is claimed that roofing felts are easily mopped over the strips to make a neat installation. The size of the angled surface is also said to reduce the possibility of cracking felt. The Celotex Corp., 120 S. LaSalle St., Chicago 3, Ill.

Cant strip of cane fibre board is lightweight, strong, easy to cut and handle

(*Continued on page 280*)

HERE'S AID TO ARCHITECTS and THEIR ENGINEERS in planning SOUND SYSTEMS!

ARCHITECTS and their engineers are invited to make full use of the experience of RCA Sound System engineers and the great RCA research and engineering laboratories, in planning and engineering sound systems.

You can get practical help on sound systems for every type of building: Schools . . . Hospitals . . . Hotels . . . Factories and Offices . . . Churches . . . Department Stores . . . Airports and Terminals . . . Warehouses and Garages . . . Auditoriums . . . Recreational Centers . . . Institutions . . . Stadiums.

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In conference rooms, offices, corridors . . . in fact, throughout the United Nations Secretariat Building the new square Anemostat Type E Air Diffusers provide stimulating, draftless comfort.

These new square Anemostat Air Diffusers offer *for the first time* . . . uniform circular air diffusion from a square outlet plus effective aspiration. This aspiration effect, the drawing of room air *into* the diffuser and mixing this room air with supply air *within* the outlet, is *the* important reason why Anemostats do a completely satisfactory job of eliminating annoying drafts and stale air pockets, equalizing temperature and humidity throughout the entire conditioned area.

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REPRESENTATIVES IN PRINCIPAL CITIES

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Anemostat Type E Air Diffusers fit without modification into the framework that holds standard size acoustic tile. At a "twist of the wrist," the inner assembly can be quickly removed for cleaning.

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Wallace K. Harrison, Director of Planning • Max Abramovitz, Deputy Director of Planning • James A. Dawson, Chief Constructing Engineer • Syska & Hennessy, Inc., Consulting Engineers • Fuller-Turner-Walsh-Slattery, Inc., General Contractor • Almirall & Co., Inc., Sub-contractors for Heating, Ventilating and Air Conditioning.

BULLETIN 29A

Gives the complete story on the new Anemostat Types E and E-1 Air Diffusers. Write for your copy.

PRODUCTS

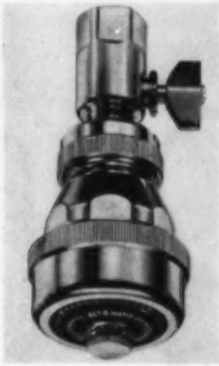
(Continued from page 278)

Shallow Well Pump

The *Fadden Shallow Well Water System* is said to eliminate the conventional water storage tank to permit direct drawing of fresh water from wells, streams, etc. Designed for rural and suburban use, the unit is said to be compact and easily installed. It weighs 36 lb, and measures 17 by 11 by 9½ in. Flexible couplings are supplied to facilitate installations under the sink or other locations. The system has a rated capacity of 250 gal per hour at 25 ft suction lift and 20 lb pressure. It is said to be self priming and completely automatic, providing a steady flow of water with the opening of one or more taps. The unit is powered by a ¼ hp heavy duty AC motor by flexible drive coupling to the pump. Operation is claimed to be very quiet. Fadden Pump Co., Minneapolis 15, Minn.

Self-Cleaning Shower Head

The *Act-O-Matic Shower Head* is said to have an automatic self-cleaning action which prevents shower heads from being limed or clogged, or from dripping. This is said to be accomplished by a special spray disc which moves downward when the water is turned on, delivering a cone-like spray. When the water is turned off the disc moves upward into drain position, opening a free waterway for draining.



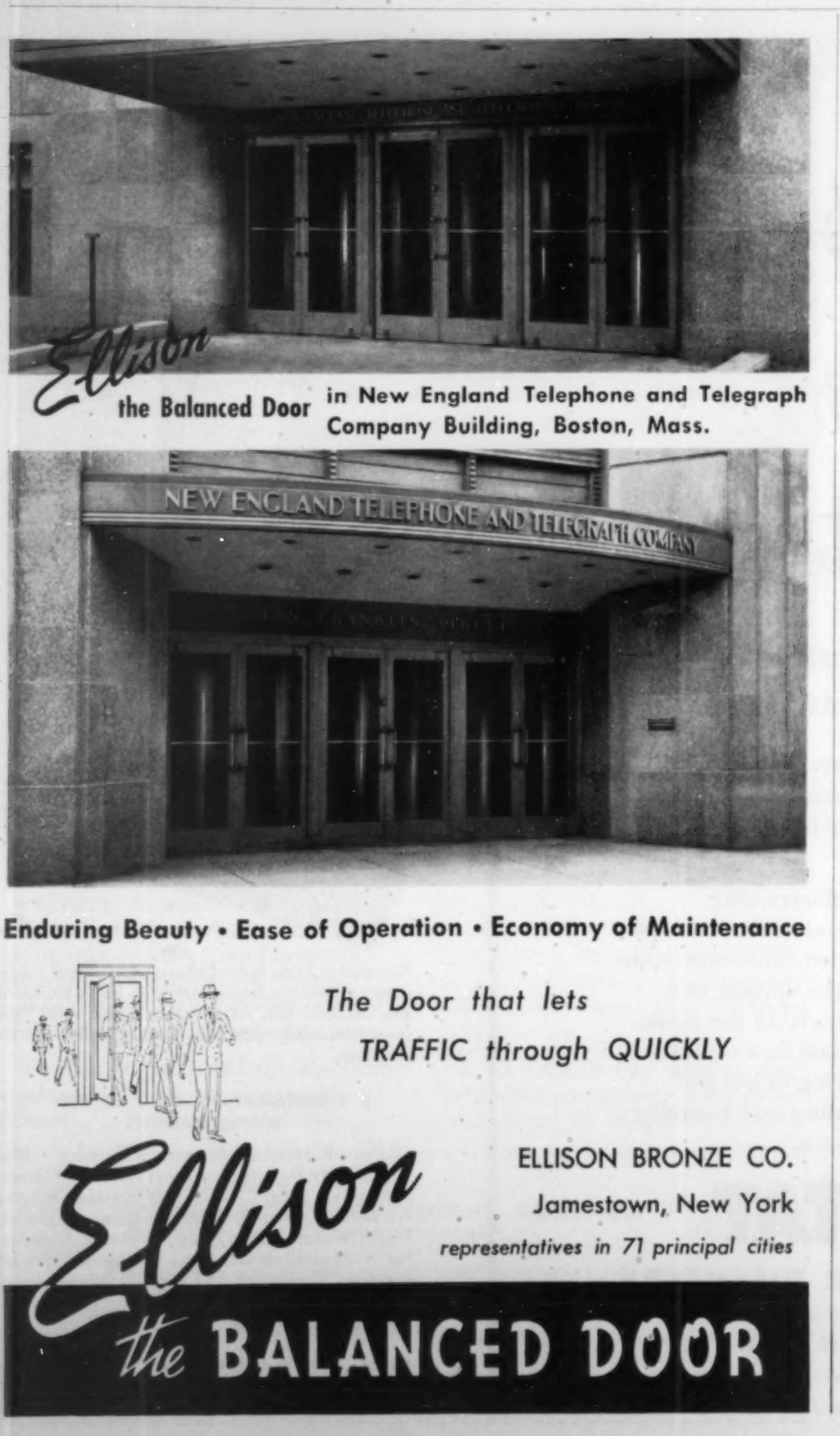
Movable disc in shower head automatically opens channel for drainage, and self-cleaning action

Each shower head is furnished chrome plated with ball joint and volume control. Vandal-proof models are available on order. Sloan Valve Co., 4300 W. Lake St., Chicago 24, Ill.

Plastic Roof Coating

Cocoon Roofing is a vinyl plastic film, applied by spraying, which is said to allow roof repairs without removing the old roof coating. Through the principle of "continuous seal" from parapet to parapet, the roofing is said to provide complete waterproofing for a building. The roofing consists of four coatings. The first is a prime coating known as *Flex-Seal Clear*, used in a thin wash coat to provide an adhesive base for the plastic coat, which is applied next. The third coat is a mastic containing gilsonite asphalt, used for durability purposes. The final coating is a gilsonite vehicle with aluminum paste for insulation purposes. Drying times for the first two coats are said to be negligible. Coverages are said to average 250 to 300 sq ft per gal for the first coat, 2½ to 3 gal per 100 sq ft for the second, and 6 gal per 100 sq ft for the third. R. M. Hollingshead Corp., 840 Cooper St., Camden 2, N. J.

(Continued on page 282)


Ellison the Balanced Door in New England Telephone and Telegraph Company Building, Boston, Mass.

Enduring Beauty • Ease of Operation • Economy of Maintenance

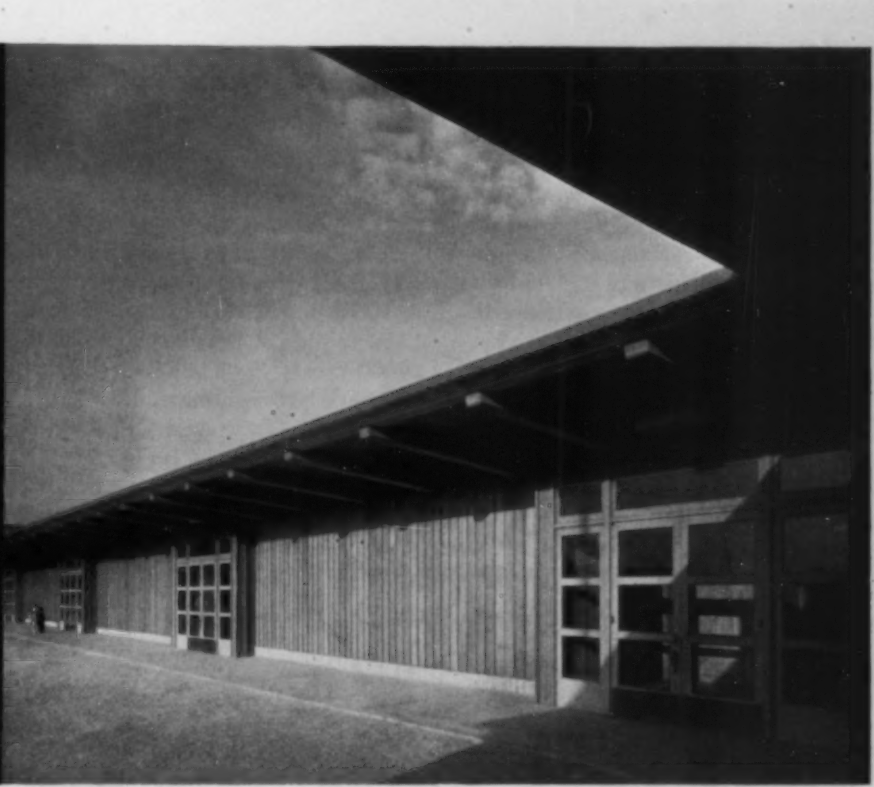
The Door that lets TRAFFIC through QUICKLY

Ellison

ELLISON BRONZE CO.
Jamestown, New York
representatives in 71 principal cities

the BALANCED DOOR

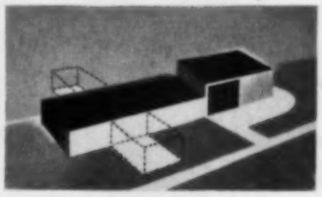
REASONS WHY SO *MANY* SCHOOLS ARE BEING BUILT OF *WOOD*



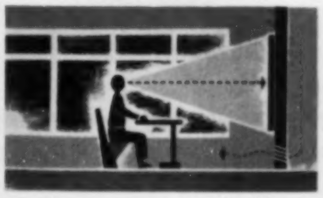
CROW ISLAND SCHOOL, Winnetka, Ill. Saarinen & Saarinen and Perkins, Wheeler & Will, *Architects.*

Hedrich-Blessing Photo

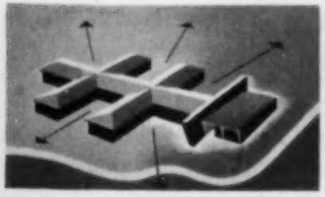
FRIENDLINESS. Large, friendly classrooms, conducive to easy concentration on school work, take advantage of the natural beauty of wood as a finishing material. Schools of wood have an inviting, homelike appearance. They belong in a neighborhood of homes.



FLEXIBILITY. Attractive schools, reflecting the natural beauty of wood, may be designed for any setting. Schools built of wood are the easiest to alter or enlarge in keeping with a community's changing needs and financial condition.



HEALTH. Wood is the ideal building material when you design classrooms that give full consideration to the health of children and teachers.



SAFETY. Wood frame construction is inherently wind and earthquake resistant. Many modern schools of wood further reduce disaster hazards—and reduce building costs, too—through designs that feature direct exit from all rooms at ground level.

Specify **WEST COAST WOODS**

Douglas Fir • West Coast Hemlock
Western Red Cedar • Sitka Spruce

FOR THE SCHOOLS *YOU* DESIGN

You plan soundly and for long building life, when you specify wood—especially West Coast Woods species—as the construction material.

Wood is durable, adaptable to every architectural style—and always in style. Wherever it is used, inside or outside, it can be depended upon to serve exceedingly well with genuine economy.

Schools of wood may be built quickly and economically. Wood is easy to obtain and craftsmen know how to use it effectively to build sturdy, solid structures of quality construction.

WEST COAST WOODS

DOUGLAS FIR • WEST COAST HEMLOCK • WESTERN RED CEDAR • SITKA SPRUCE

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Please send me my free copy of "Today's Better Schools."

Name______________________________

Address______________________________

City__________________ Zone____ State________

PRODUCTS
(*Continued from page 280*)

Built-In Radio-Phonographs

Two *Scott* radio-phonograph chassis for custom installations or custom-built cabinets have been recently introduced. The *Model 800-B* has a 2-unit chassis, with 24 tubes including a rectifier and voltage regulator. Its audio frequency range is 35 to 20,000 cycles, with the AM range from 35 to 8500 cycles and FM from 35 to 15,000 cycles. It also has a short wave band and plug-in to the audio systems for outside units. The set can be operated with remote control keyboards, available as extra equipment.

Second of the units is the *Model 510*, which has 14 tubes including 2 rectifiers. It also has the 2-unit chassis. With a 12-in. speaker, it has a fidelity of 30 to 20,000 cycles. Both sets have 3-speed automatic record-changers. Scott Radio Laboratories, Inc., 4541 N. Ravenswood Ave., Chicago 40, Ill.

Porcelain-Steel Sink Tops

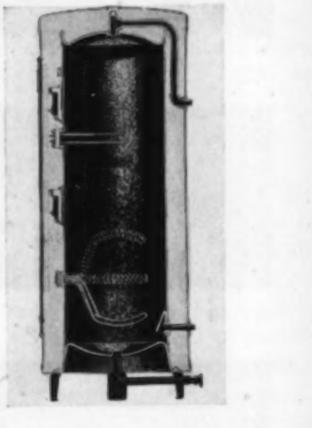
Miratop sink tops are made of vitreous porcelain fused to heavy gauge steel, then laminated to waterproof cushion sheets and plywood. It is said not to be affected by alcohol, household acids or heat. The tops are made in 11 colors, and in any size. Excel Sales Co., 1026 Reedsdale St., Pittsburgh 12, Pa.

Baseboard Heater Changes

The United States Radiator Corp. announces that one of its products will have the name changed from *U.S. Comfort Ray* to *U-S Radiant Baseboard*. The new models will also have the ratings increased by about 15 per cent in accordance with the proposed I-B-R rating code. United States Radiator Corp., Radiant Baseboard Div., Detroit 31, Mich.

Water Heater

Through use of a patented adjustable element, any of three volumes of water is heated in the new *Smith 3-Way* automatic electric home water heater. The C-shaped heating element is located in the lower part of the tank, and utilizes the immersion principle of water heating. Placed in upper position, it heats the 50 gal strata of water above it. In horizontal — or intermediate — position, the element provides 60 gal of hot water, and in the lower position, it heats 80 gal. In addition to the change of position, the element may be set for wattages of 1000, 2000 or 3000, depending on terminal connections. Units are available with zinc-clad tanks or glass-fused-to-steel. A. O. Smith Corp., Kankakee, Ill.



Electric water heater employs adjustable element to vary volume of water heated

TERRAZZO in action

Terrazzo

lets the "help" off easy

The hospital lobby floor illustrated is easy to keep spotless because it's hard to hurt. TERRAZZO is practically mar-proof, so benches are pushed aside, not worked around. Highly stain-resistant, TERRAZZO requires only routine washing and cleaning. Marble-hard and concrete-durable, it's easy on the "help."

Versatile as an architect's imagination, TERRAZZO allows infinite combinations of patterns and colors. Specify colorful, long-lasting TERRAZZO—for individuality and trouble-free service.

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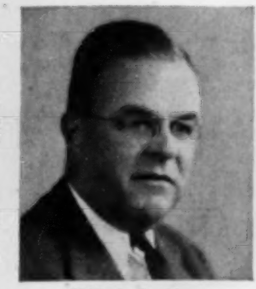
711 14th St. N.W. Dept. R Washington 5, D. C.

Air Conditioning in Textile Mills*...

by P. L. Davidson, Philadelphia, Pa.
and John deB. Shepard, Greenville, S. C.
Consulting Engineers



Philip L. Davidson

John deB. Shepard

Question: Is a Central Station System more desirable than a Unit System?

Answer: "Both have obvious advantages. In a central station versus units, the cost of the base mechanical system is approximately equal. The former's cost exceeds that of the unit because it requires enclosure. This added cost, however, is offset by inherent easier maintenance and improved operating efficiency. Units, generally, should be limited to a capacity of 12,000 cfm. Central stations are often not practical beyond one floor of multistory mills, or to exceed 150,000 cfm."

Question: Does refrigeration have a place in textile mills?

Answer: "Definitely. Recent refrigeration installations give quick opportunity to spot effects of constant temperature in improved machine operation and handling of fibres. Current experiences with central systems reveal: (1) In a weave room operating on rayon fabrics with a modern central station humidifying system, the loom stops ranged from 2.3 to 5.4 per producing loom hour. The loom efficiencies averaged 92.6%, the seconds ranged between 15 and 16%. *When refrigeration was added*, the loom stops over a period of two months dropped to a range of 1.2 to 2.9. The efficiencies rose to 96%; the seconds dropped to a range between 4 and 7%.

(2) "A cotton spinning mill, after the installation of refrigeration, increased its spindle speeds 5% and its work load 14% with no increase in ends down.

(3) "A weave room running on combed broadcloth showed, after installation of refrigeration, an increase in production of 4½ to 5%.

(4) "A New England mill reported a 25% increase in production in a spinning room after the installation of a central station air conditioning system with refrigeration. This was attributed primarily to a decrease in absenteeism and only secondarily to a decrease in ends down.

"Records such as these highlight the results obtained with central station equipment where refrigeration is employed to fix temperatures constantly within a range of maximum efficiency and reasonable employee comfort. Advantages are frequently realized at an investment no greater than that required with straight or 100 per cent air systems.

"*This experience, proven in the textile field, should be significant in setting the pattern for all industrial air conditioning.*"

• • •

YORK SALES POLICY

York believes in channeling contract work through Architects, Engineers and Contractors. You are therefore assured of unequaled support toward providing the finest air conditioning systems for your clients. York Corporation, York, Penna.

York's complete line of refrigerating and air conditioning products is the result of 65 years of resultful research and encompass:

1. a complete line of equipment
2. competitive prices
3. accurate, dependable product ratings
4. technical assistance based on "case histories"
5. cooperation with architects, engineers and contractors
6. practical help from York-trained engineers
7. a national organization
8. continuous product research and development
9. certified maintenance

York refrigeration air conditioning

The big advances come from

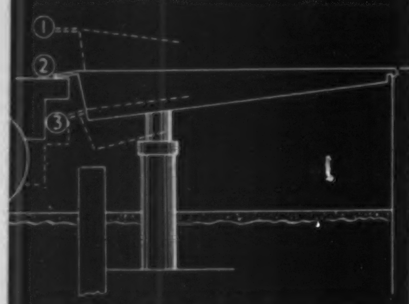
YORK

Headquarters for – **Refrigeration and Air Conditioning**

This advertisement condensed from an article authored by these consulting engineers, and published in* **Refrigerating Engineering, *February, 1950*

SELF

LEVELING



RAMP

GLOBE ENGINEERED EQUIPMENT

A great time saver for your clients' loading and unloading operations. Globe Self-Leveling Ramp permits material to be wheeled directly from dock to truck, regardless of varying truck bed heights. Loads are moved faster, without hand lifting and with less breakage. Time and work savings up to 50%.

Drawing shows operation sequence of both Direct-Air and Hydraulic type Self-Leveling Ramps: (1) Ramp elevated to receive truck. (2) Truck backed into place with ramp "Lip" lowered to truck bed. (3) Ramp "riding" firmly with the truck when springs are compressed or expanded during loading or unloading.

Globe's experienced Lift Engineers will be glad to advise with you on your lifting or handling problems. Suggestions or estimates are yours for the asking without obligation.

Mail coupon today for Bulletin A650 giving full details and illustrating many other types of Globe Industrial Lifts.

MODERN LIFTING
GLOBE

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1000 E. Mermaid Lane, Philadelphia 18, Pa.

Please send Bulletin A650 showing illustrations, specifications on Self-Leveling Ramps, OiLift Freight Elevators, Sidewalk Elevators and Lifting Platforms.

Company..
Name.......................... Title..............
Street.............. City........... State.......

GLOBE HOIST COMPANY
Des Moines 6, Iowa   Philadelphia 18, Pa.

LITERATURE

(*Continued from page 178*)

trated. Many charts, graphs, diagrams and pictures are included. 32 pp., illus. National Association of Fan Manufacturers Association, Inc., 2159 Guardian Bldg., Detroit 26, Mich.

Metal Doors and Roofing

(*1*) *Overly Architectural Metal Products;* (2) *Overly Goodwin Batten Metal Roofing and Coping.* The first of these bulletins illustrates and describes combination metal door frames, jamb and trim; and kalamein and tin clad doors. Features, suggested specifications, details and dimensions are given.

The second bulletin presents a prefabricated batten type of metal roofing and coping. The component parts of the system are illustrated. Details show methods of installation and jointing. Suggested specifications are included. 8 pp., 4 pp., illus. Overly Manufacturing Co., Greensburg, Pa.*

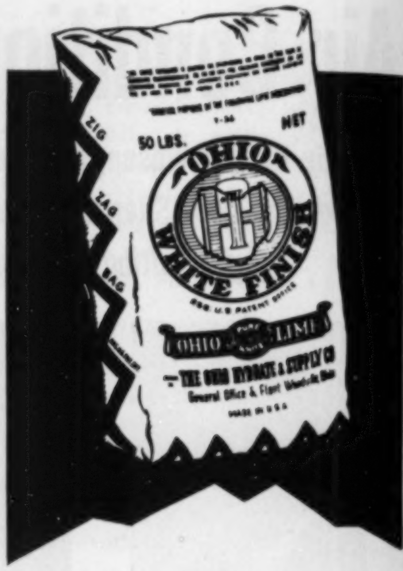
Panel Heating

Hoffman Specialty Co. Engineering News. A series of 13 bulletins on home panel heating prepared for the use of contractors, wholesalers, engineers and architects. The subjects covered include: (1) Panel Heating; (2) Calculations for Panel Heating; (3) Structural Details of Heating Panels; (4) Supplementary Calculations for Panel Heating; (5) Air Vents for Heating Systems; (6) No. 79 Air Vent for Hot Water Lines; (7) Resetting Series 90 Controller for Panel Heating; (8) Resetting Controller after installation; (9) Pressure Reducing Valves (out of print); (10) Radiator Vent Valves; (11) Resetting Temperature Control for Standing Radiation and for Panel Heating; (12) Ratings of Low Pressure Float and Thermostatic Traps; (13) Specifications for Panelomatic Hot Water Control System. Hoffman Specialty Co., Indianapolis 7, Ind.*

Architectural Aluminum

Reynolds Architectural Aluminum. Portfolio covers a line of extruded shapes, embossed sheet, perforated sheet, plain sheet and plate, tubing and

(*Continued on page 286*)



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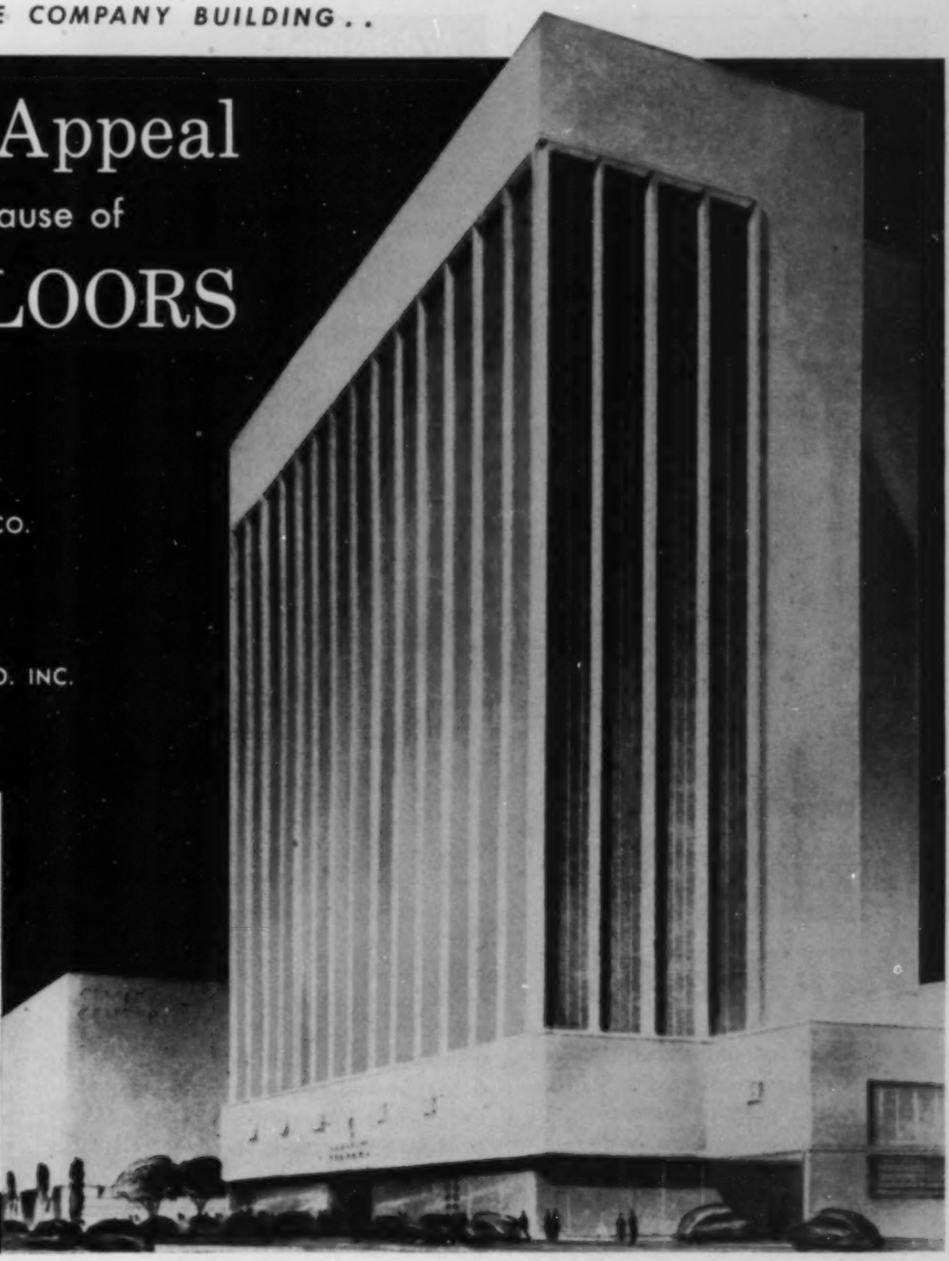

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GEORGE DAHL
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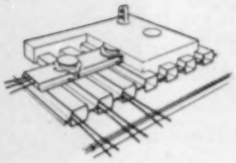

Architect George Dahl knows Q-Floor is not the lowest-priced floor on the market, but the best interests of a client are served by examining the final cost of a building and by specifying that material which brings about the best end result.

The quoted price of Q-Floor should be considered in relation to all other factors which are changed by the use of Q-Floor:

lightweight Q-Floor construction saves other materials in foundation and frame;

dry construction saves time, avoids winter delays and makes possible a variety of economies during erection;

earlier completion date effected by Q-Floors shortens financing time and permits earlier revenue . . . brings quicker cash benefits;

quick, inexpensive, easy electrical change attracts tenants, helps fill building quickly;

electrical flexibility protects your client's investment from electrical obsolescence.

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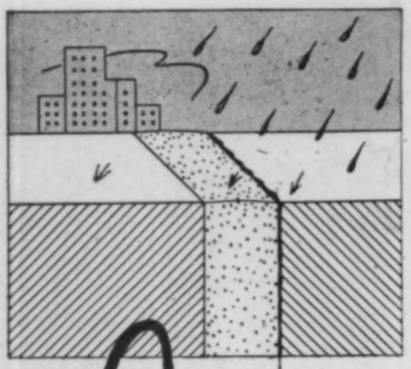

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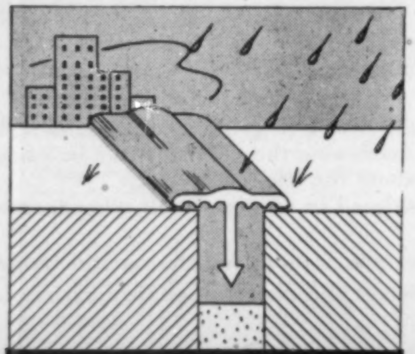

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AR-6-50

LITERATURE

(*Continued from page 284*)

pipe, and other aluminum products for architectural use. Full size cross sections and assembly drawings are shown for all items. In each instance, the various alloys, tempers, sizes and lengths available are detailed. Among the items shown are: suspended aluminum ceilings; thresholds; sills; jambs; mouldings; partition framing sections; copings; gravel stops and fascia plates. The portfolio is available to architects, designers, engineers, and other company officials requesting it on their company letterhead. 61 pp., illus. Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky.*

Exhaust Fans

Emerson-Electric Exhaust Fans For Business, Industrial and Institutional Buildings (Catalog Unit No. X6559). Illustrates a line of direct-drive and belt-drive exhaust fans, window fans, and ventilating fans. Information is included on the selection, installation and use of exhaust fans. Details of design, construction, specifications and performance data are given for the entire line. A copy of the catalog will be mailed to those requesting it on company stationery. 16 pp., illus. The Emerson Electric Mfg. Co., 8100 W. Florissant, St. Louis 21, Mo.*

Radiator Valves and Traps

Marsh Radiator Valves and Traps (Catalog Sections 10 and 11). Features various patterns available in the line of valves and traps. Notes and diagrams explain construction, operation and use. Each type is covered with illustrations, details, roughing-in dimensions and capacities. Details of radiator valve accessories are also included. 16 pp., illus. Marsh Heating Equipment Co., Skokie, Ill.

Slate

Buckingham-Virginia Slate Specification. Folder lists characteristics, color and texture of the slate. Tables give suggested combinations in random widths and lengths, the number of pieces to the square in each size of slate, and the length exposed when laid standard

(*Continued on page 288*)

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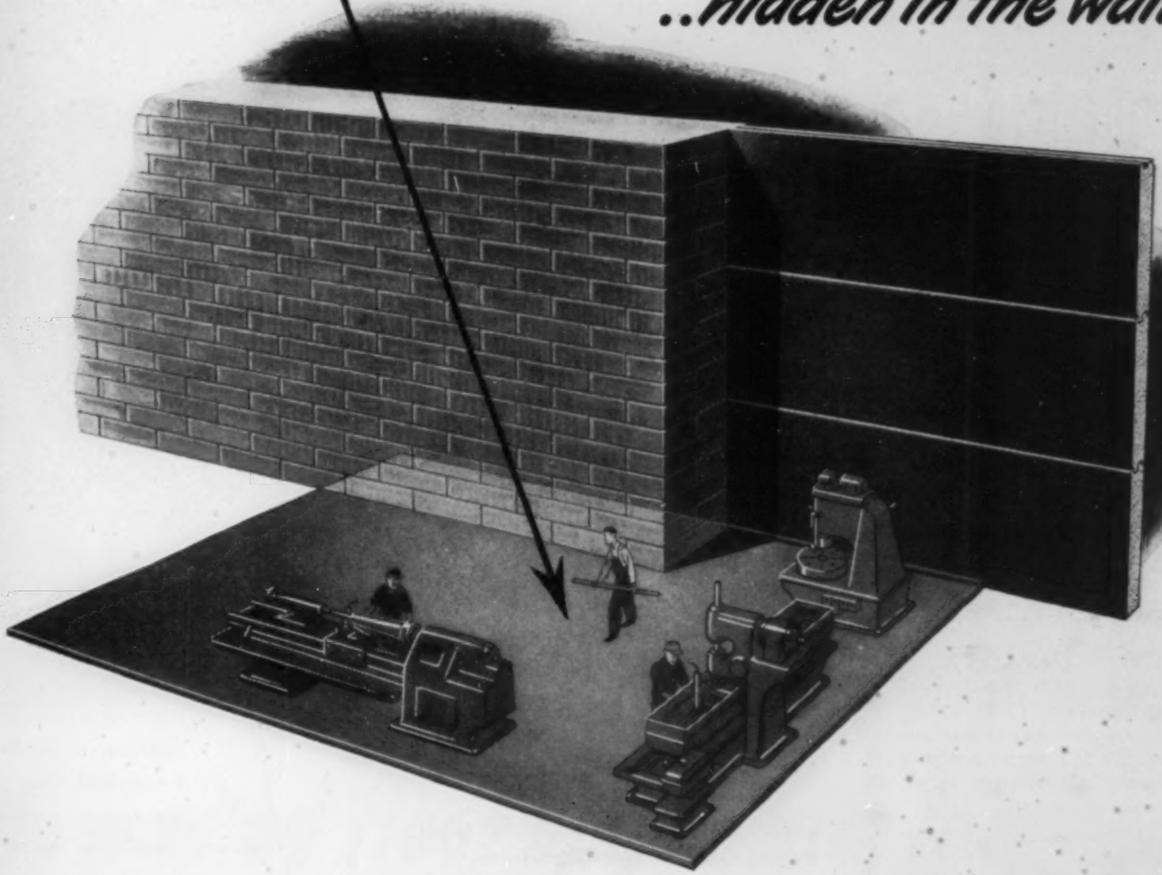
FOUND

602 sq. ft. of floor space ..*hidden in the wall!*



It was a small plant Mr. Williams was building—150′ x 250′. Instead of the usual 12″ thick wall of brick, an alert young engineer suggested the new 3″-thick, insulated Fenestra* "C" Panels he'd heard so much about. Same function . . . same insulating value . . . same outside building dimensions. But *inside*—602 sq. ft. more floor space than he'd have had with the old-style wall. Floor area equal to a 20′ x 30′ room.

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That they are lightweight, strong . . . reducing requirements for structural steel.

That they are noncombustible.

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And he *will* discover, when he wants to expand, that they are easily dismantled, moved and reinstalled.

Fenestra Insulated "C" Panels are standardized 3″ deep, 16″ wide, 18 gage painted steel or 16 B&S gage aluminum, 6′ to 14′ in length. Those of steel weigh only 6.50 lbs. per sq. ft. Aluminum, 3 lbs. Two formed members, joined to form a structural unit. Asphaltic impregnated felt inside full length of the joints to prevent metal-to-metal contact. Vapor-sealed, with felt stripping between formed sides and end closures. Double tongue and groove joints make a wall of "C" Panels an integral load-bearing unit. 3 positive bearing surfaces per panel for easy erection. Smooth surface permits easy flashing details.

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LITERATURE

(*Continued from page 286*)

headlap. The specifications cover the following items: general and guarantee, slate and application, roofing felt, cement, nails, hips, ridges and valleys. 4 pp., illus. Buckingham-Virginia Slate Corp., 1103 E. Main St., Richmond, Va.

Flue Pipe

Johns-Manville Transite Flue Pipe For Venting Domestic Gas-Burning Appliances (Form TR-84A). Pictures and describes the asbestos and cement flue piping. Drawings give sectional details of round and oval pipe and fittings. A table gives dimensions and weights for all types. Installation methods are shown, along with several combinations possible with the fittings. Johns-Manville, 22 E. 40th St., New York 18, N. Y.*

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Jack Z. Baruch, 1665 S. Central Park Ave., Chicago 23, Ill.

Dennis B. Behrendt, Architect, 2144 Melrose, Chicago, Ill.

Charles B. Belinky, Architectural Student, 3971 Blaine St., N. E., Washington 19, D. C.

David S. Booth, Student, 256 Forsythe Ave., Girard, O.

L. L. Doney, Draftsman, 1035 W. 13th St., San Pedro, Calif.

Dean M. Du Boff, Architect and Engineer, 106 E. State St., Peoria, Ill.

Robert W. Etheredge, Jr., Draftsman, 2114 Pine Dr., Raleigh, N. C.

Alexander H. Girard, 379 Fisher Rd., Grosse Pointe 30, Mich.

Samuel Horn, Architect, 2075 E. 29th St., Brooklyn 29, N. Y.

M. Michael Kane, Registered Architect, 1457 E. 68th St., Chicago, Ill.

Lucille H. Murawski, Architect, 3219 Hudson Blvd., Jersey City, N. J.

J. W. Sinnott, Sperry Gyroscope Co., Great Neck, L. I., N. Y.

Jack Turner, R.F.D. No. 2, Wilton, Conn.

John J. Zecca, Jr., Student, 24–41 81st St., Jackson Heights, N. Y.

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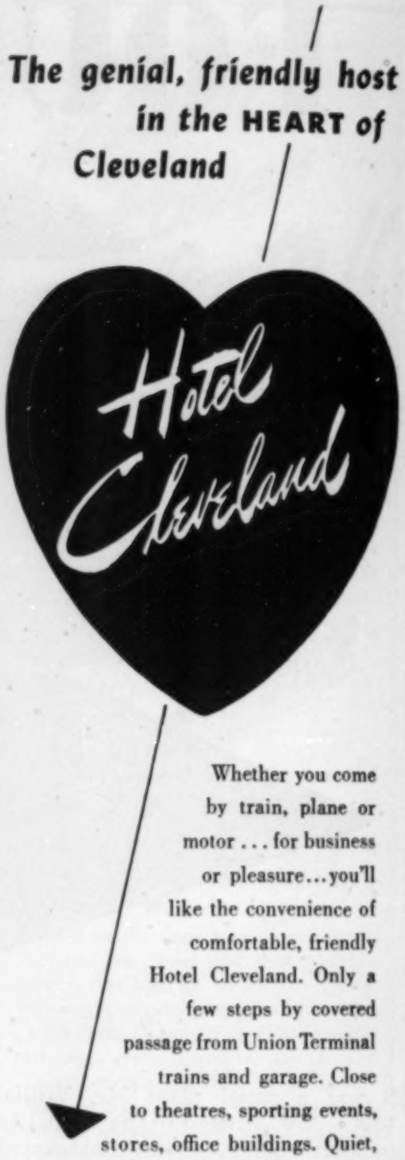

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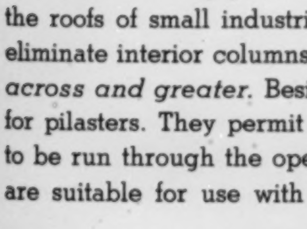

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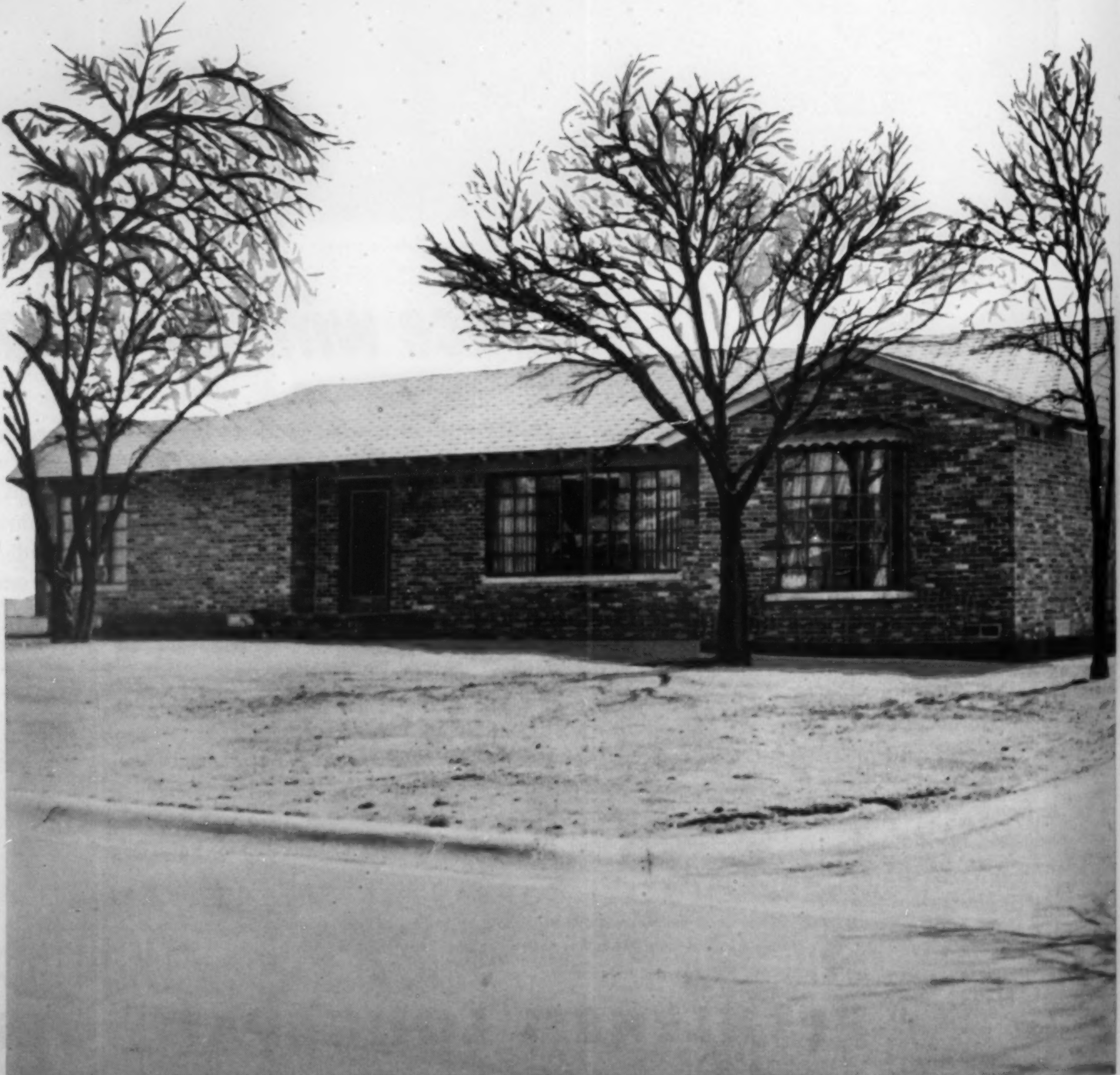

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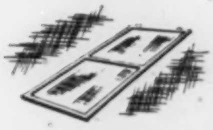
These simple economies can offset its cost–

Many of the customary features in a home no longer have functional value when *All-Year* Air Conditioning is included . . . such things as porches, fireplaces, screens, etc. So in your preliminary planning you leave them out. This way you'll generally save enough to make up the cost of the Servel system. And clients feel they're making a marvelous exchange. For while the things that are omitted provide comfort for only *portions* of the year, Servel provides them with ideal comfort *all year*.

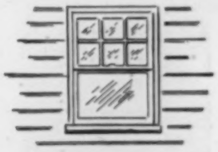


NO SCREENS

NO PORCH

NO ATTIC FAN

NO FIREPLACE



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TOPS in new-home comforts today is *All-Year* Air Conditioning. Year round, the air is healthfully conditioned all through the house. Year round, the humidity is carefully controlled to eliminate stickiness in summertime and the drying-out tendencies of winter. Year round, the air is filtered clean—free of dust, dirt and pollen. Bracing in summer. Cosy in winter. The flick of a finger brings instant results. And by making the decision to include Servel *All-Year* Air Conditioning early in the planning stages, you can give your clients this ultimate in comfort at little or no extra cost.

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When you select air conditioning for your new building, remember the words—"Air Conditioning by Chrysler Airtemp" mean much more than they say. They mean that the building will embody all of the indoor comfort made possible by modern science . . . that it will have the *ideal* system to meet the air conditioning requirements of its occupants—*year-'round!*

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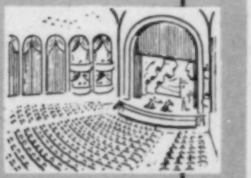

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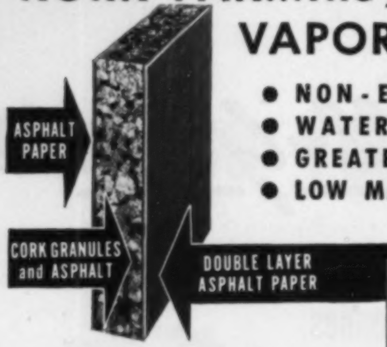

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at the slab-footing joint to prevent heat loss through concrete floor slabs in basementless houses and structures on grade—get maximum joint filling efficiency PLUS the highest insulating factor of any similar material. KORK-PAK's low cost and easy handling make it ideal for many applications such as Sill Vapor Seal, Glass Building Block Seal, Joint Filler, etc., in every type of construction.

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Stainless Steel Storm Windows

Corrosion resistant . . . won't warp, bend or twist . . . never need painting . . . require virtually no upkeep . . . last a lifetime

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THIS rather recent development—*Stainless Steel* Storm Windows—should be of interest not only to home owners but to architects and builders as well. For it offers a highly desirable combination of advantages hitherto not obtainable in storm window construction . . . superlative good looks, permanent freedom from upkeep expense, and service that will outlast the building itself. The life-long performance that Stainless Steel assures, means *lowest* cost in the long run.

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CONSTRUCTED OF *U·S·S Stainless Steel strip, these welded, reinforced and precision-built combination storm windows will give low-cost, lifetime service. They are produced by Corry-Jamestown Manufacturing Corporation, Corry, Pa.*

Other U·S·S Stainless Steel applications:—Gutters, downspouts and flashings · Copings and cornices · Window frames, sashes and screens · Show windows · Sculpture-relief or free-standing · Elevator doors and cars · Heating panels · Stair and door nosings · Hardware fireplace facings · Multistoried building pilasters · Store fronts · Parapets and spandrels · Curtain walls · Chutes and conveyors · Doors, interior and exterior · Kick plates and push plates · Sills · Stair rails · Escalator housings · Interior and exterior trim · Shower stalls · Grilles, plaques, louvers · Revolving doors · Cold-formed sections · Decorative trim.

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Consider these facts:—Stainless Steel provides the highest strength-to-weight ratio of any structural material. It remains practically unaffected by corrosive attack, by extremes of heat or cold. It offers unsurpassed resistance to abrasion, wear and severe service. It is incombustible. It is easy to clean. It does not stain or discolor adjacent areas. It retains its lustrous good looks and superior strength indefinitely with the minimum of care and maintenance. With Stainless Steel, *first cost is virtually last cost.*

In U·S·S Stainless Steel—a perfected, service tested stainless—all these advantages are available in material form in sheets, plates, strip, bars, wire, tubing and piping of practically any dimension; in structural sections and special shapes of great variety; and in all standard architectural surface finishes.

Our representatives will gladly cooperate with you in developing your designs to include U·S·S Stainless Steel to insure optimum performance at minimum cost.

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U·S·S STAINLESS STEEL

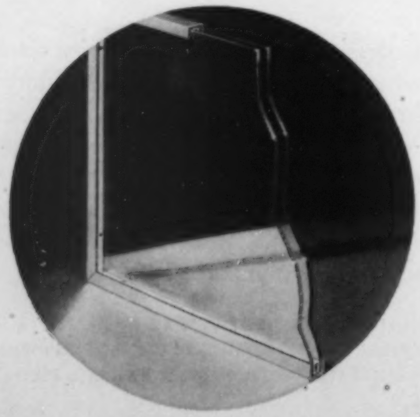
SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

0-993

UNITED STATES STEEL

Noteworthy uses OF GLASS

① **THIS VIEW** of the new terminal building at the South Bend, Indiana, airport, presents a spectacular scene—by day as well as at night. The whole effect is heightened by the use of more than 125 Twindow units which glaze almost the entire area of this side of the building. The built-in insulation of Twindow adds to the comfort and convenience of the patrons by eliminating cold downdrafts at windows. Besides, Twindow units afford a clear view of the airport activities. Architect: Roy A. Worden, South Bend, Ind.; Associate Architect: Vincent Fagan, South Bend, Ind.; Consulting Architect: Frank Montana, Detroit, Mich.



CUTAWAY shows the construction of a Twindow unit, with two panes of Pittsburgh Polished Plate Glass. The hermetically-sealed air space between the panes provides effective insulation which minimizes downdrafts, cuts heat losses through windows, reduces condensation. When three or more panes are used, insulation is even more efficient. Forty-five standard picture window sizes are available, adaptable either for wood or steel sash.

Douglas Shoe Co

② **PITTSBURGH DOORWAYS** cut corners for architects. They eliminate time-consuming calculations. There is no setting or fitting to worry about. From the twelve standard and four free-standing designs, you select the one for your job, simply by specifying the number and size needed. The frame reaches the job complete and ready for bolting into the building opening—in one "package." The massive Herculite Doors are then hung, and the work is done. Architect: Horace Coy, Toledo, Ohio.

IN CURRENT DESIGN

GARSON
MEDICAL EQUIPMENT
2403
2401
PHILCO

③ **GLASS HAS TRULY HELPED** to open new vistas in store front design. With large panels of Pittsburgh Plate Glass, architects have given merchants the greater benefits that come from "open vision." For this makes the entire interior a gigantic display, presenting the merchandise to the best possible advantage. In this group of two stores, Carrara Structural Glass, Herculite Doors, Pittsburgh Plate Glass and Pittco Store Front Metal were combined to create structures of immediate appeal and distinction. Architect: Myrle E. Smith, South Bend, Ind.

④ **HERE'S AN ELEGANT** and dramatic setting in the reception room of the New York beauty salon of Michael-of-the-Waldorf. Along with other striking features are the walls of multi-paneled, beveled Pittsburgh Mirrors which pick up and reflect all the beauty, brilliance and subtlety of the furnishings and illumination. Designers: Earnshaw, Inc., New York and Philadelphia.

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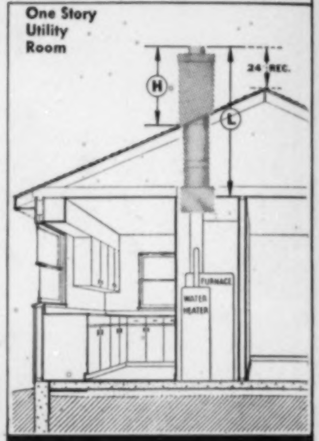

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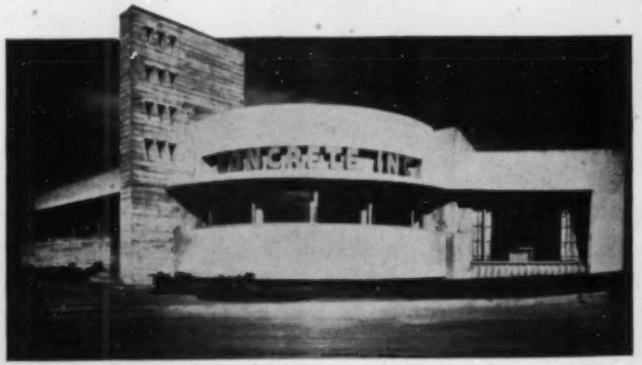

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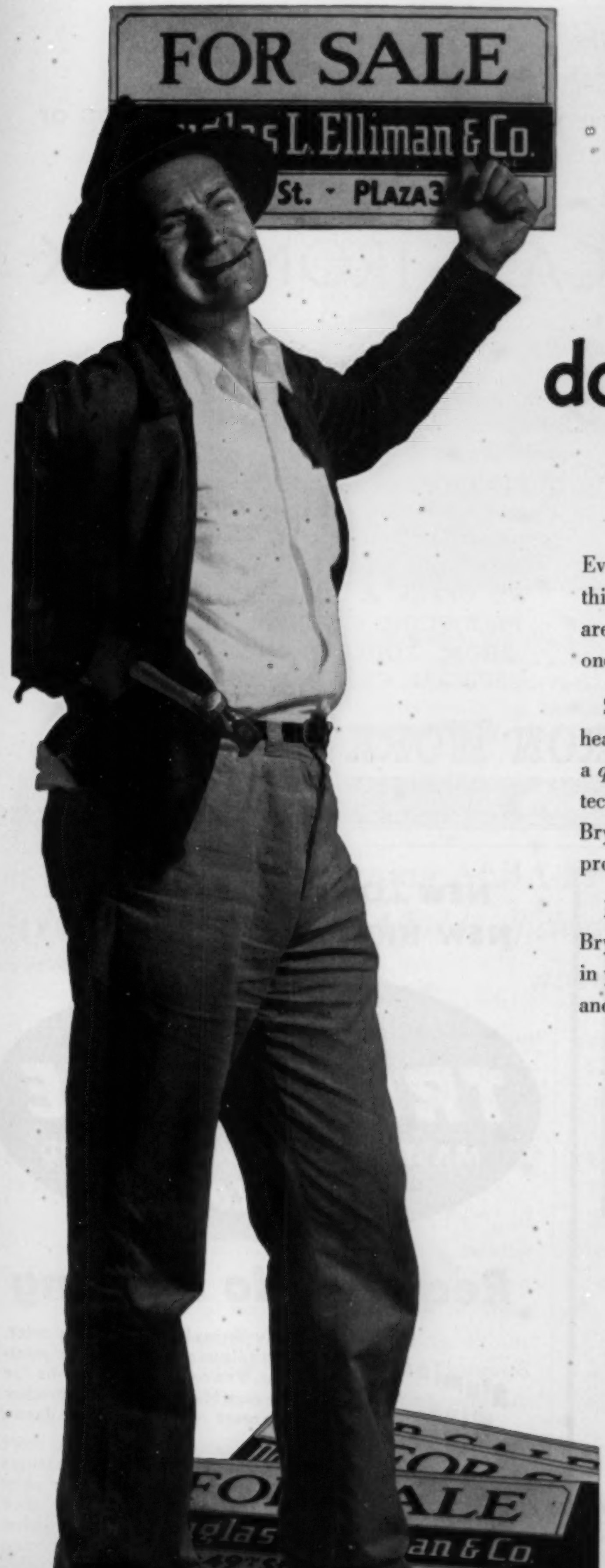

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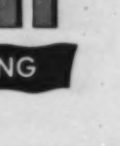

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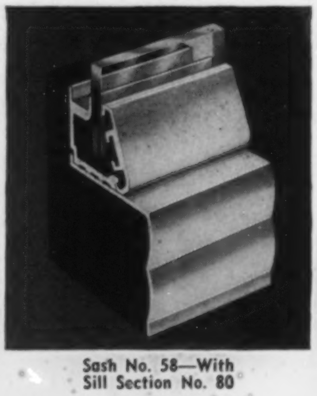

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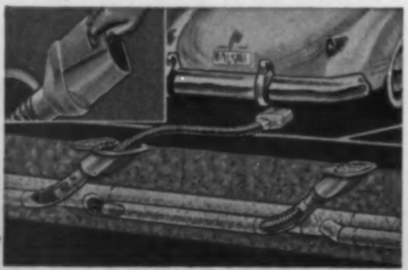

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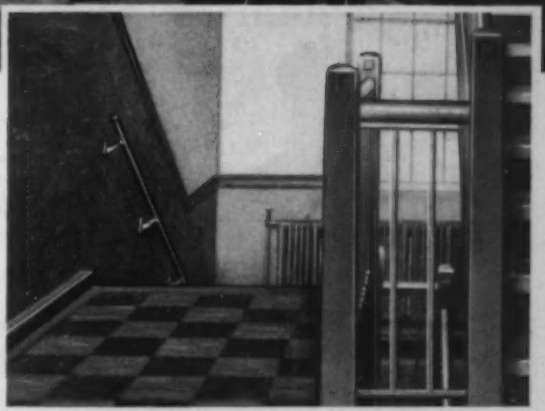
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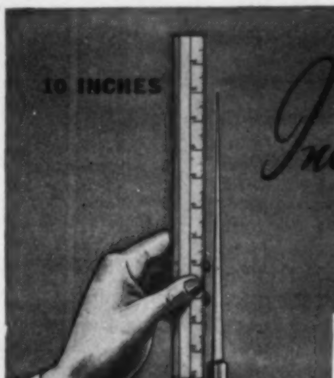

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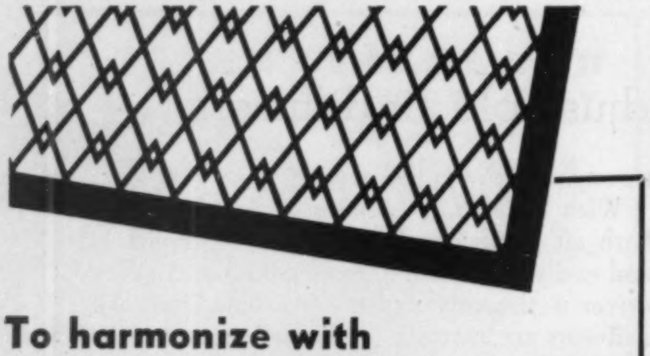

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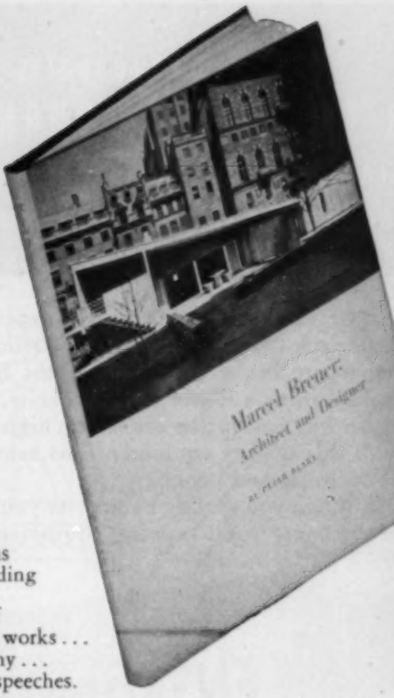

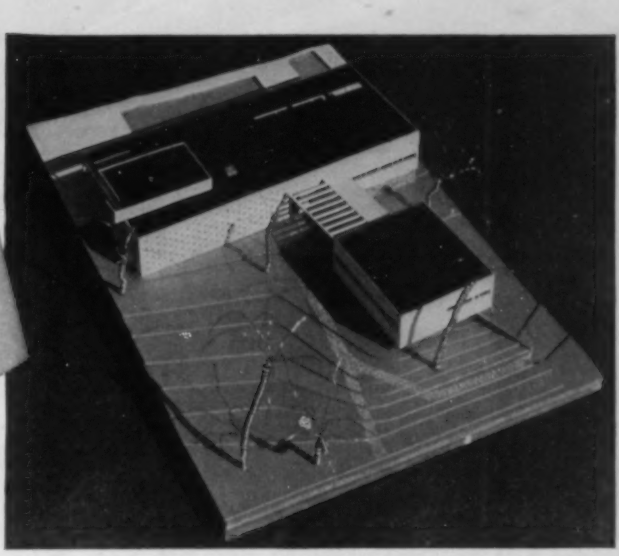

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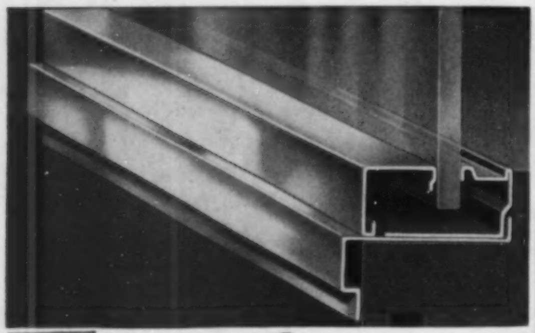

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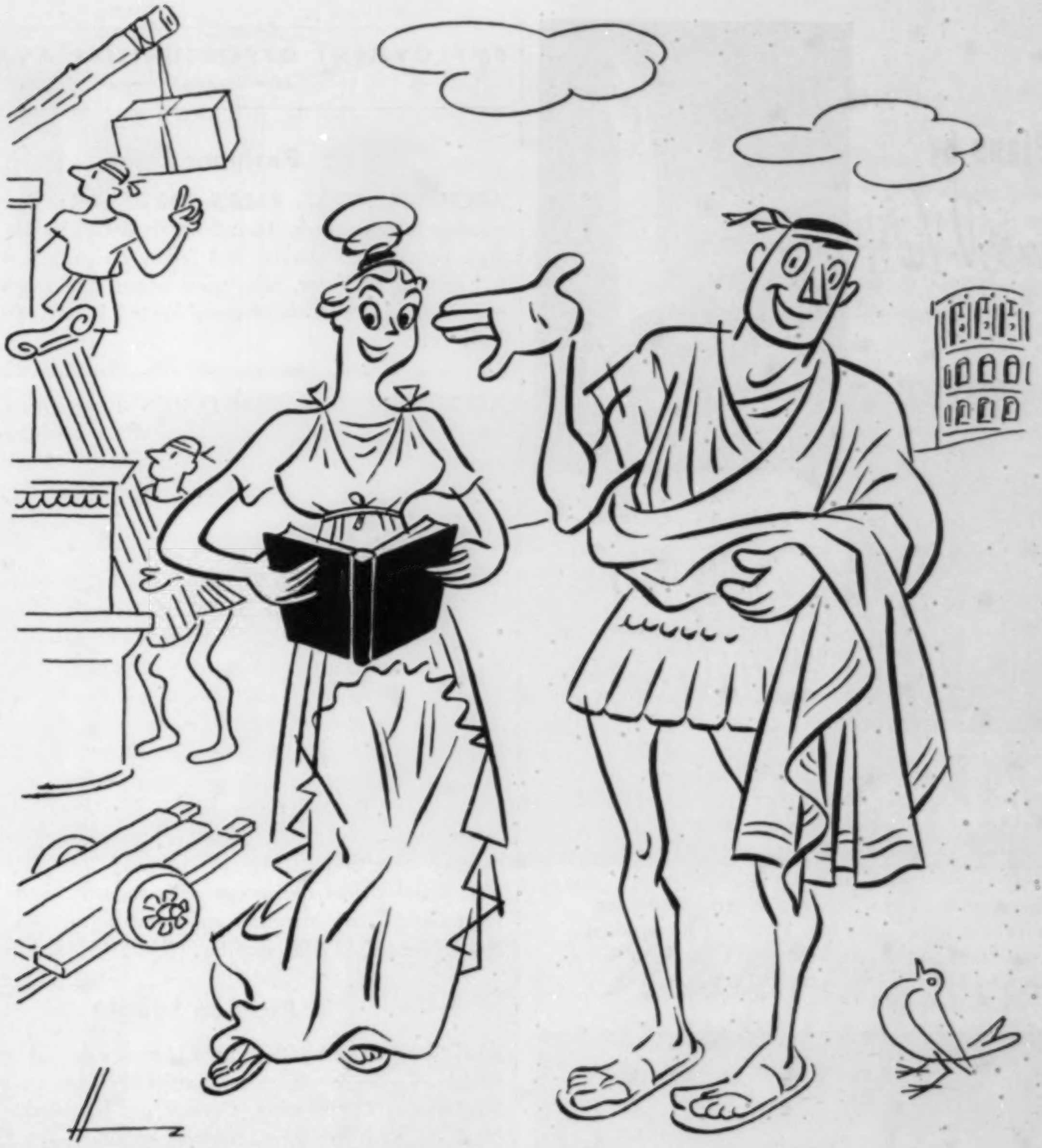

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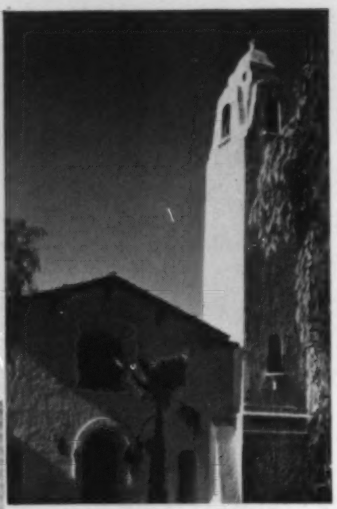

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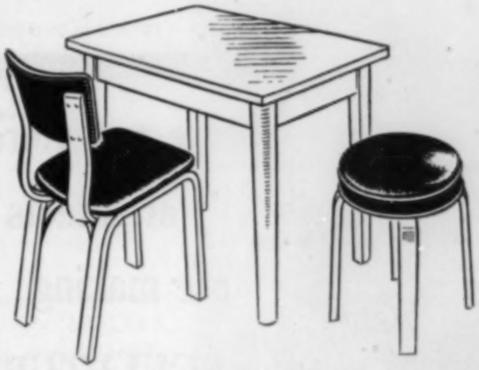

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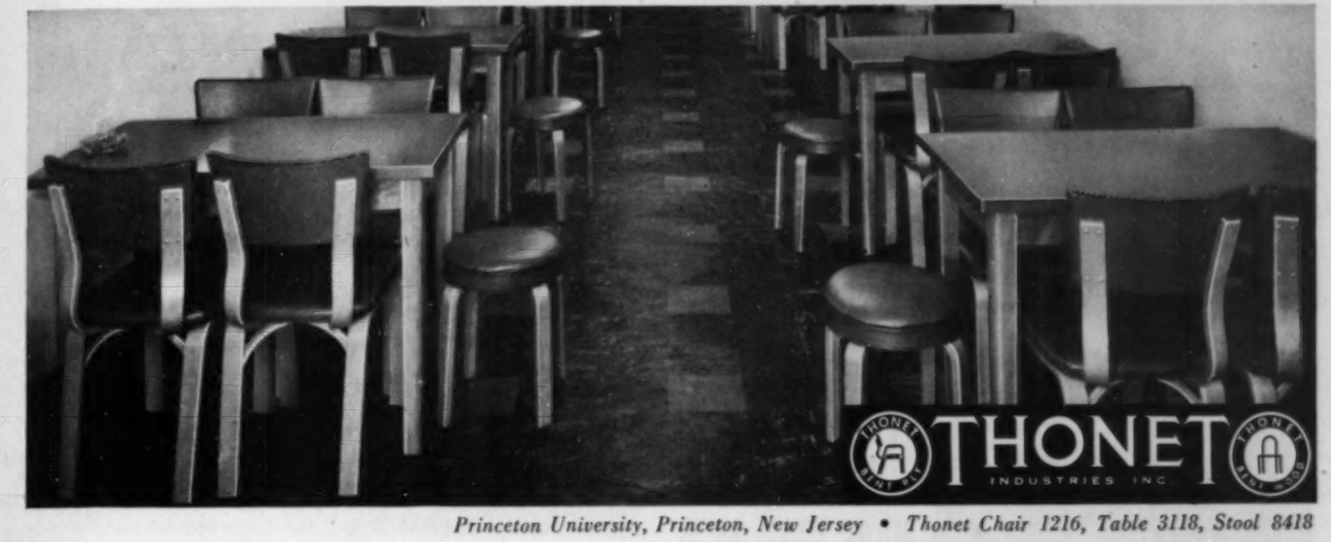

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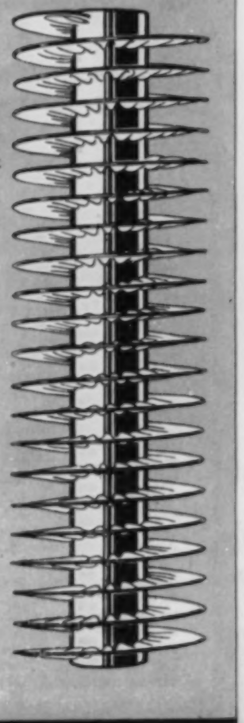

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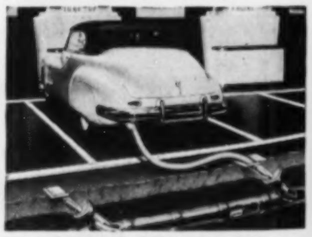

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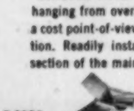

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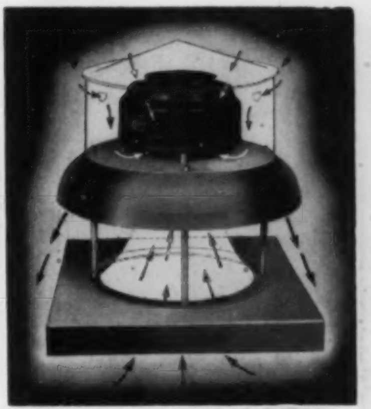

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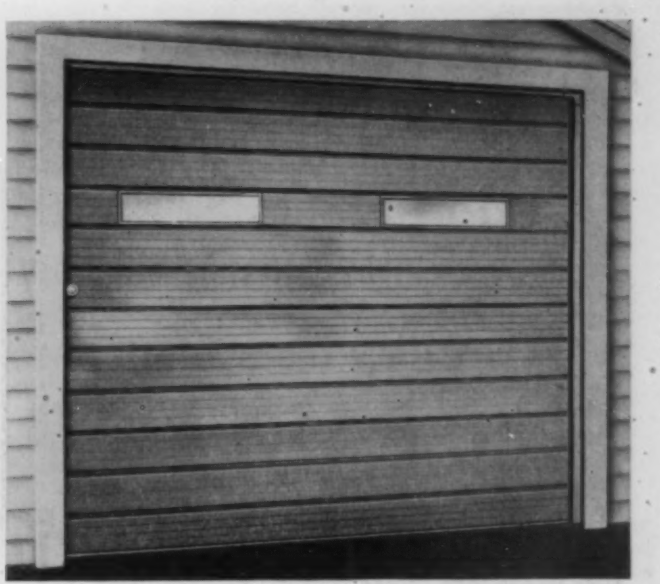

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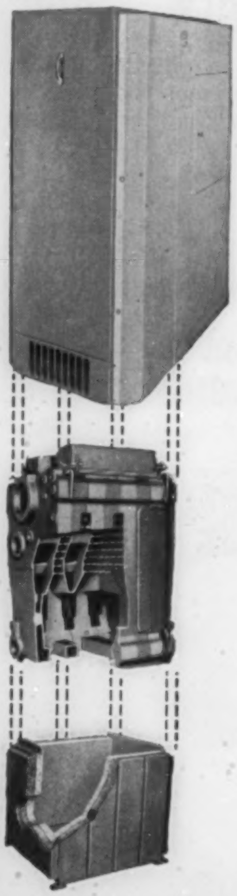

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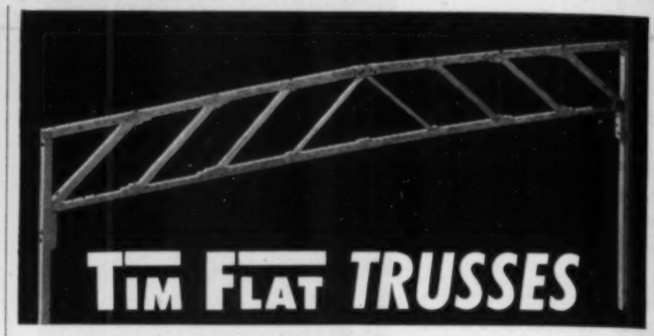

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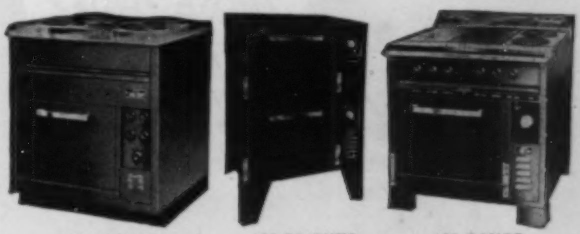

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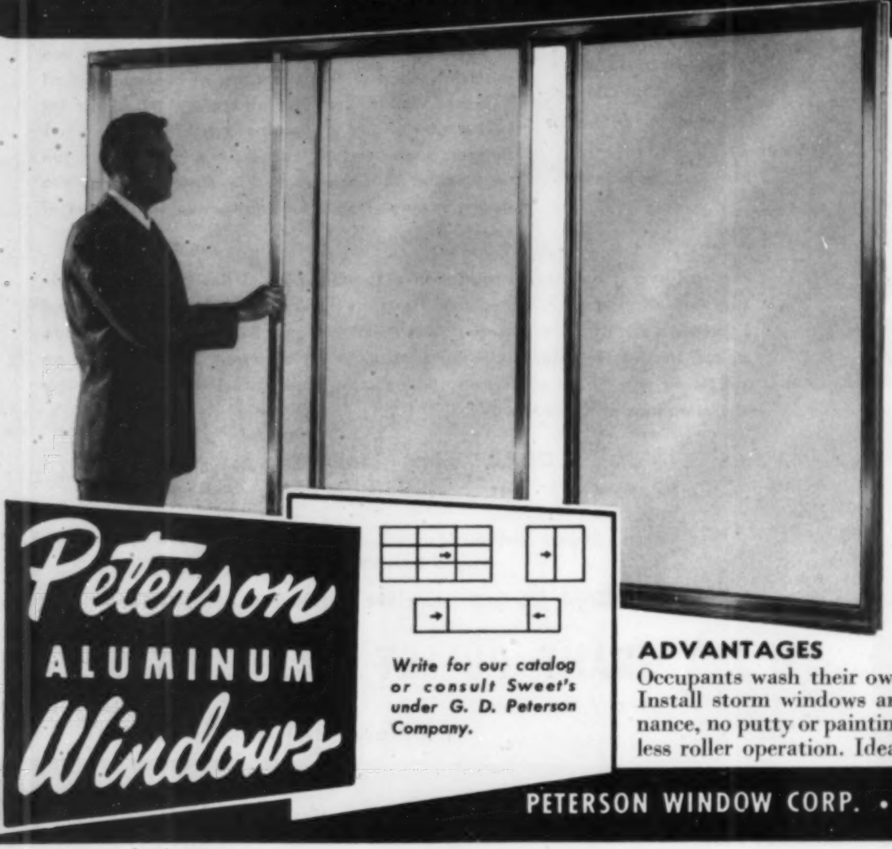

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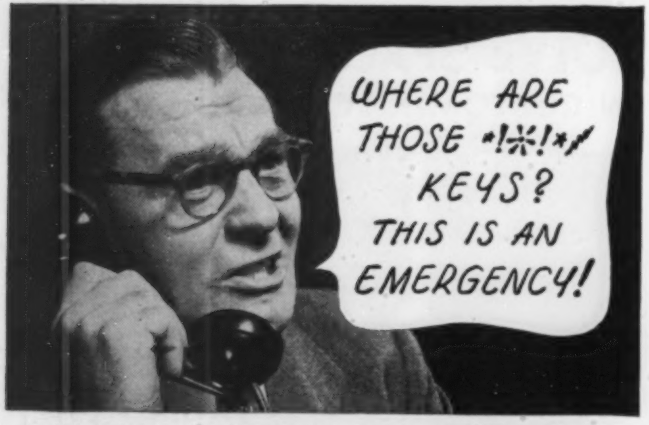
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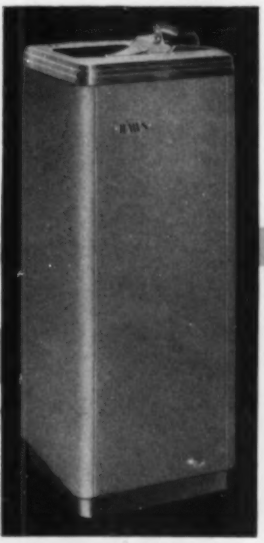

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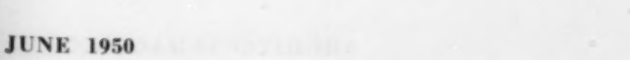

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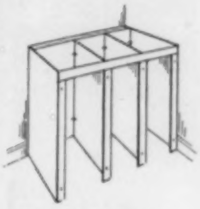

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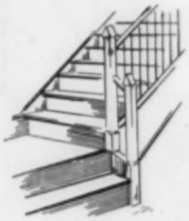

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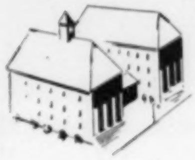

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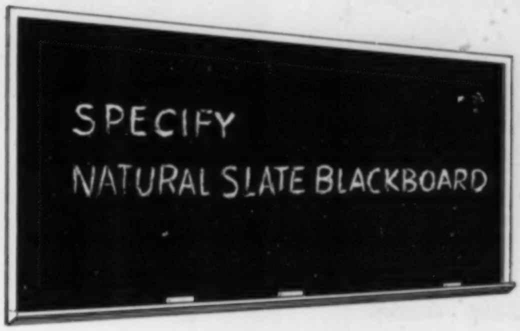

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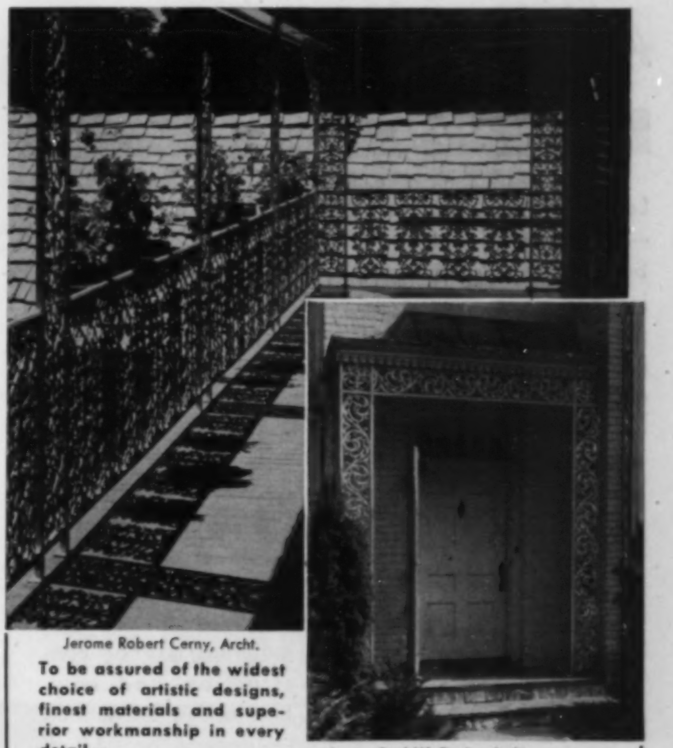

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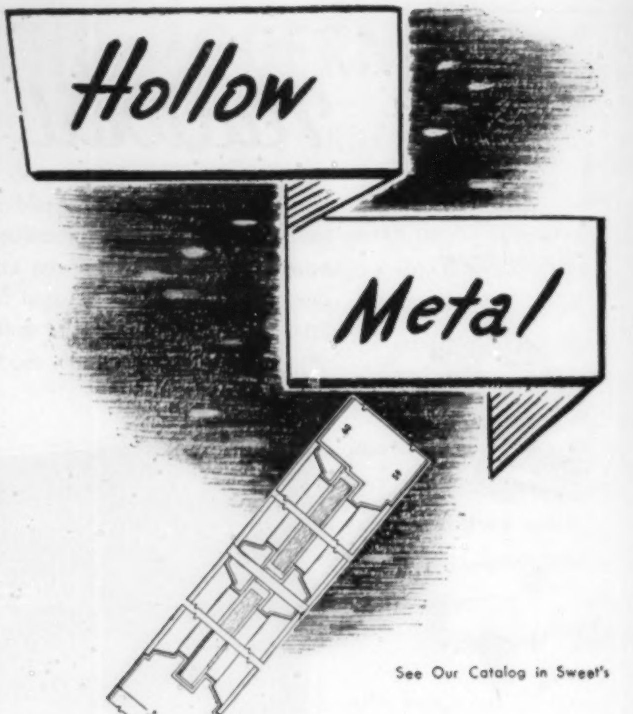

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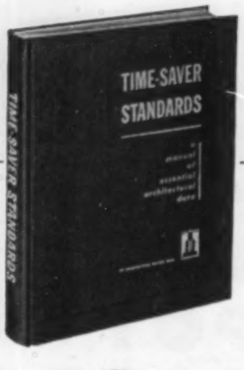

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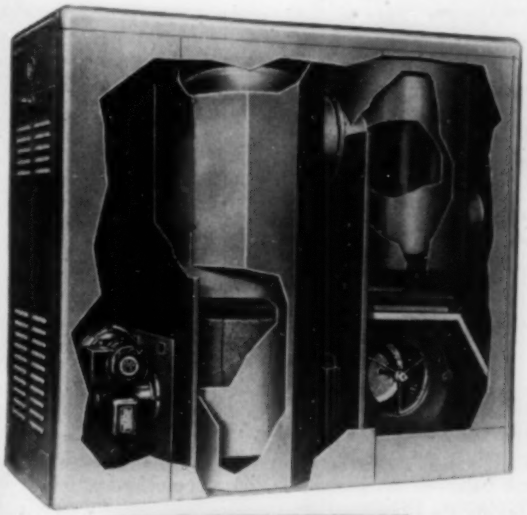

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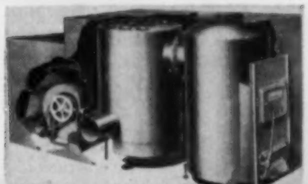

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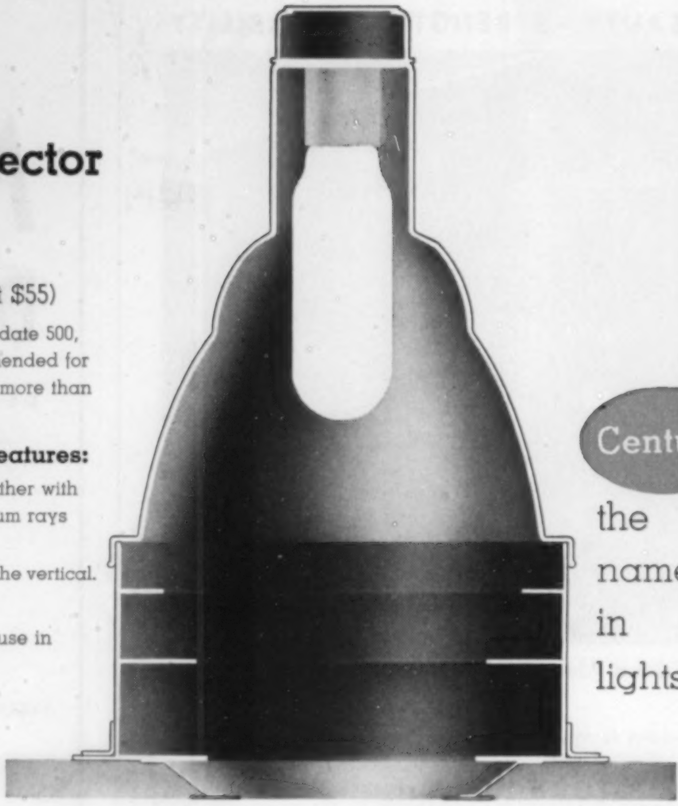

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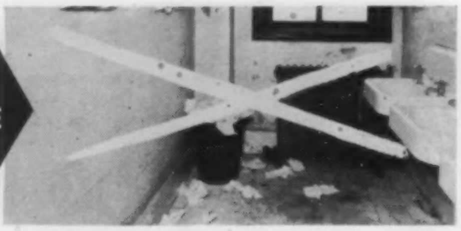

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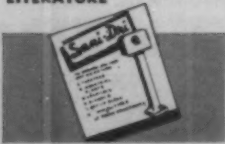

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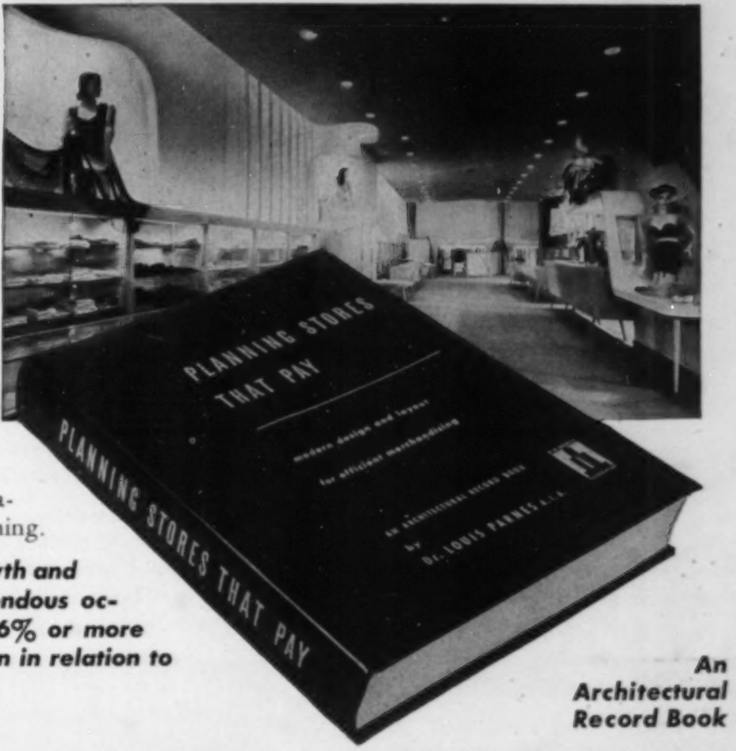
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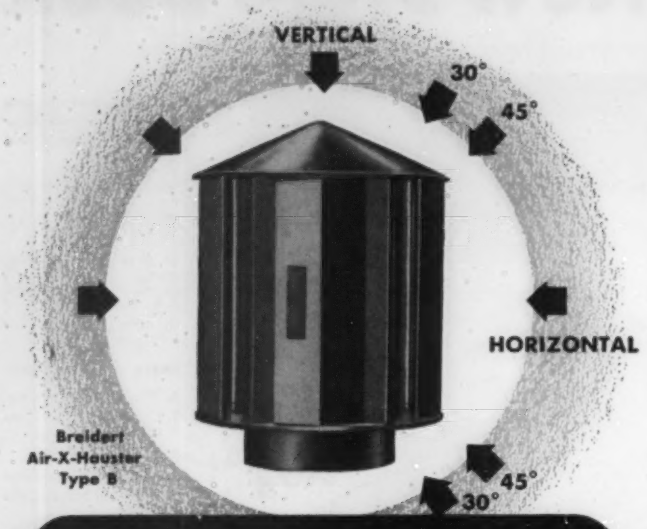

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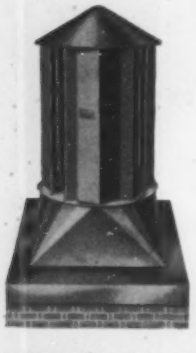

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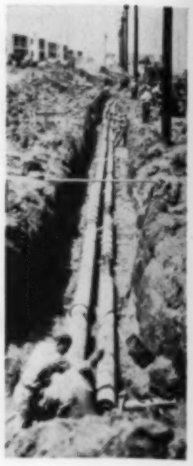

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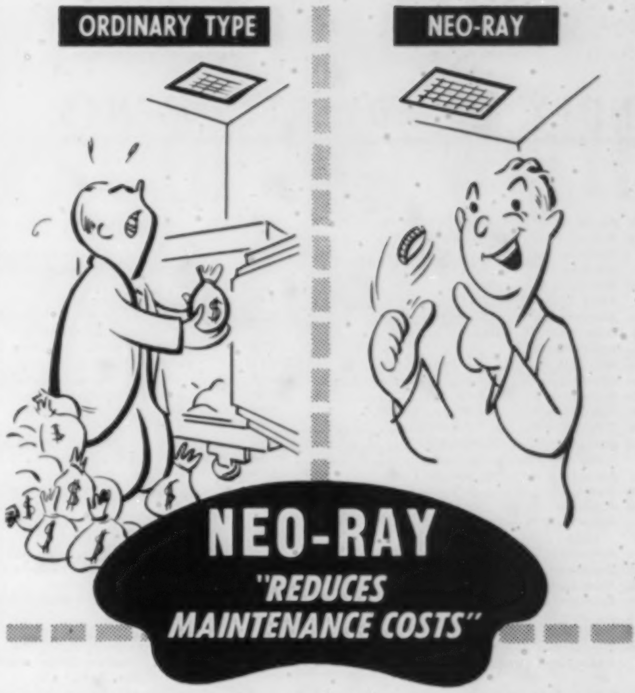
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a Aluminum Company of America 250–251
abe Aluminum Window Manufacturers Assn. 86–87
a American Air Filter Co. Inc. 33–36
ae American Abrasive Metals Co. 276
ae American Blower Corporation 50
a American Brass Company 223
American Hardware Corp. 46
American Hospital Supply Corp. 313
abe American Lumber & Treating Co. 240
ab American-Olean Tile Company 91
American Radiator & Standard Sanitary Corp. 218–219
American Steel & Wire Company 195
ae American Structural Products Co. 225
ab American Telephone & Telegraph Co. 38
a Anaconda Copper Mining Co. 223
a Anemostat Corp. of America 279
Art Metal Company 17
ab Associated Plywood Mills, Inc. 51
Associated Products, Inc. 313

ae Barber-Colman Company 53–54–272
ab Bell Telephone System 38
a Bethlehem Steel Company 64–289
Bigelow Rugs & Carpets 68
a Blue Ridge Sales Division 40
Bonniers 302
Books 305–316–318–321
a Brasco Manufacturing Co. 306
Breidert, G. C. Co. 322
ab Bruce, E. L. Co. 81
ab Bryant Heater Dept. 297
Buckingham-Virginia Slate Corp. 194
Burnham Corporation 312
ae Burt Mfg. Co. 182
Byers, A. M. Co. 4

ab Cabot, Samuel, Inc. 212
a Cambridge Tile Mfg. Co. 43
ae Carnegie-Illinois Steel Corp. 293
ae Carrier Corporation 66
ab Ceco Steel Products Corporation 2–3
abe Celotex Corporation 32
a Century Lighting, Inc. 320
Certain-teed Products Corporation 171
Certified Furnace Co.—Division 319
Chicago Hardware Foundry Co. 320
a Chrysler Corporation 292
Cipco Corporation 262
Combustion Equipment Division 286
Committee on Steel Pipe Research 243
Concrete Materials Corporation 229
Connor, W. B. Engineering Corp. 303
Corbin, P. & F. Division 46
a Corning Glass Works 299
b Crane Co. 213
Crucible Steel Company of America 97
a Cutler Mail Chute Co. 323

a Dalmo-Continental, Inc. 252
a Dant & Russell, Inc. 296
a Day-Brite Lighting, Inc. 78
abe Detroit Steel Products Company 211–287
Dicks-Pontius Co. 200
Dodge, F. W. Corporation 307
Dravo Corporation 186
ae duPont, E. I. deNemours & Co. 288
Durant Insulated Pipe Co. 322

Eastman Kodak Company 181
Edwards Company, Inc. 90
Electric Storage Battery Co. 92
a Ellison Bronze Co. 280
Employment Opportunities 308
Enterprise Engine & Foundry Co. 306

a Fedders-Quigan Corporation 183
Federal Seaboard Terra Cotta Corp. 310
a Fiske, J. W. Iron Works 317
a Fitzgibbons Boiler Company 174
abe Flintkote Company 2nd Cover
a Follansbee Steel Corporation 256
Fremont Rubber Company 215
ab Frigidaire Division 60

Gallaher Company 311
ab Gate City Sash & Door Company 220
a General Electric Co.—Wiring 52
ab General Motors 60
a General Portland Cement Co. 315
Globe Automatic Sprinkler Co. 306
ae Globe Hoist Company 284
Goodrich, B. F., Co.—Flooring Division 27–206
Governair Corporation 190
ab Grant Pulley & Hardware Co. 313
ae Grasselli Chemicals Dept. 288
abe Great Lakes Steel Corporation 67
ae Grinnell Company, Inc. 57
Guth, Edwin F. Co. 184

Hager, C. & Sons Hinge Mfg. Co. 176
a Haws Drinking Faucet Co. 314
a Haynes Products Co. 322
ab Heatilator, Inc. 267
ae Hendrick Manufacturing Co. 304
a Hillyard Chemical Co. 316
Holophane Company, Inc. 221
ab Homasote Company 245
Home Owner's Catalogs 307
a Hood Rubber Company 206
a Hope's Windows, Inc. 82
a Horn, A. C. Company, Inc. 217
a Horn Brothers Company 241
Hotel Cleveland 288
House & Garden 202
abe Hunter Fan & Ventilating Co., Inc. 204

a Imperial Brass Mfg. Co. 14
Infra Insulation, Inc. 13
ae Inland Steel Company 208
ab Inland Steel Products Co. 172
ab Insulite Division 55
International Nickel Company, Inc. 42
ae International-Van Kannel Revolving Doors 222

a Jackson & Church Co. 3rd Cover
a Jamestown Metal Corp. 318
Jenkins Bros. 69
Jerrold Electronics Corporation 209
ae Johns-Manville 201
Johnson, John A. & Sons, Inc. 6–7
ae Josam Manufacturing Co. 95

a Kennedy, David E., Inc. 237–301
Kent-Moore Organization, Inc. 310
ae Kinnear Manufacturing Co. 180
Koh-I-Noor Pencil Co., Inc. 292
Kohler Co. 48
ab Kwikset Locks, Inc. 8

a L.C.N. Closers, Inc. 235
abe Libbey-Owens-Ford Glass Co. 40–271
Lincoln Electric Company 247
Litecontrol Corporation 253
Lone Star Cement Corporation 1
Lorio Iron Works 298
ab Louisville Cement Company, Inc. 65

a Macomber, Incorporated 255
ae Mahon, R. C. Company 31
ae Maple Flooring Manufacturers Assoc. 257
a Marble Institute of America, Inc. 249
ab Marsh Wall Products, Inc. 265
Masland Duraleather Co. 304
a Mastic Tile Corporation of America 75
a Matot, D. A., Inc. 319
a Medart, Fred Products, Inc. 185
a Medusa Portland Cement Co. 311
ab Mengel Company 231
Merritt-Chapman & Scott Corp. 188
abe Mesker Brothers 44–45
ab Metal Tile Products, Inc. 309
Michaels Art Bronze Co. 214
ae Mills Company 79
Minneapolis-Honeywell Regulator Co. 100
Minnesota Mining & Mfg. Co. 273
ab Minnesota & Ontario Paper Co. 55
a Minwax Company 286
ae Mississippi Glass Company 260
ae Moeschl-Edwards Corrugating Co., Inc. 210
ae Moore, P. O., Inc. 314
Morrison Steel Products, Inc. 304–311
a Mosler Safe Co. 21

a Natcor Store Fronts 298
ae National Electric Products Corporation 197
a National Gypsum Company 277
National System of Garage Ventilation 300
a National Terrazzo & Mosaic Assoc. 282
a Natural Slate Blackboard Company 317
e Nelson, Herman Division 33–36
e Neo-Ray Products, Inc. 323
e New Castle Products 315
e New York Silicate Book Slate Co. 29
NuTone, Inc. 196

Ohio Hydrate & Supply Co. 284
ae Otis Elevator Company 246
ae Owens-Corning Fiberglas Corp. 207–268

Pass & Seymour, Inc. 318
a Peterson Window Corp. 314
abe Pittsburgh Plate Glass Company 199–294–295
a Pittsburgh Reflector Company 239
abe Pittsburgh Steel Products Co. 49
Ponderosa Pine Woodwork 248
Powder Power Tool Corporation 230
Powers Regulator Co. 269
a Pryne & Co., Inc. 94

RLM Standards Institute 315
Radio Corporation of America 278
a Republic Steel Corporation 56–275
abe Revere Copper & Brass, Inc. 70
ae Reynolds Metals Company 74–179–238
ab Richmond Radiator Company 179
ae Ric-Wil Company 37
abe Roberts Co. 227
ae Robertson, H. H. Company 285
a Robertson Manufacturing Company 96
a Roddis-Plywood Corp. 58
a Rohm & Haas Company 99
a Rotary Lift Co. 84–85
ae Rust-Oleum Corporation 61

Samson Cordage Works 317
a Sanymetal Products Co., Inc. 89
a Schieber Mfg. Co. 310
a Schlage Lock Company 189
a Sedgwick Machine Works 244
ab Servel, Inc. 290–291
Servicised Products Corp. 292
Shepard Elevator Company 312
Sjostrom, John E. Company 96
ae Sloan Valve Company 4th Cover
a Smith, H. B. Company, Inc. 20
Sola Electric Company 59
Solar Air-Flo, Inc. 258
Soss Manufacturing Co. 302
a Speakman Company 192–193
Square D Company 39
a Stained Shingle & Shake Assoc. 47
Stainless & Steel Products Co. 319
Standard Electric Time Company 203
a Steel & Tubes Division 275
ae Stemco Corporation 232
Stewart Warner Corporation 216
abe Stran-Steel Division 67
a Structural Slate Company 317
a Struthers Wells Corporation 236
ae Swartwout Company 254
a Symmons Engineering Company 80

Tel Autograph Corporation 274
Thonet Industries 309
abe Tile-Tex Division 71
Timber Engineering Co. 323
ae Timber Structures, Inc. 312
Titus Mfg. Corp. 73
a Titusville Iron Works Co. 236
Todd Shipyards Corp. 286
abe Trane Company 88
a Tremco Mfg. Co. 298
a Trinity Portland Cement Division 315
ae Trumbull Electric Mfg. Co. 72
abe Truscon Steel Company 56
a Tuttle & Bailey, Inc. 76–77

United States Air Conditioning Corp. 270
ab United States Plywood Corp. 259
ae United States Steel Corporation Subsidiaries 195–263–293
a United Steel Fabricators, Inc. 18
a Universal Atlas Cement Company 263
a Universal Bleacher Company 80
a Uvalde Rock Asphalt Co. 19

a Valley Metal Products Company 191
Van-Packer Corporation 296
a Van Range, John Co. 264
a Vonnegut Hardware Co. 62
a Vulcan Radiator Co. 233

ab Waylite Co. 226
a Wayne Iron Works 300
ae Webster, Warren & Company 205
a Weis, Henry Manufacturing Co., Inc. 234
a Werner, R. D. Co., Inc. 300
West Coast Lumbermens Assoc. 281
West Dodd Lightning Conductor Corp. 302
abe Westinghouse Electric Corp. 41–93
a Westinghouse Electric Corp.—Elevator Div. 63
Weyerhaeuser Sales Company 98
ae Wing, L. J. Mfg. Co. 242
a Wright Manufacturing Co. 224
Wurdack Chemical Company 296
Wurlitzer, Rudolph Co. 308

ae York Corporation 283
a Young Radiator Company 261

ab Zegers, Incorporated 320
abe Zonolite Company 325

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SEMI-ANNUAL INDEX • VOLUME 107 • JANUARY-JUNE 1950

BTS—Building Types Study • TSS—Time-Saver Standards • AE—Architectural Engineering section

A

Acorn House, The. "Folding" house for prefabrication. Carl Koch, archt.; John Hancock Callender & Huson Jackson, assoc. archts.; John Bemis, engr. — BTS — May, pp. 152–158.

Acoustics. See "Architectural Acoustics."

Administration Buildings. Pitzer Hall, Claremont Men's College, Claremont, Calif. — BTS — June, pp. 122–123.

Adobe Villas, Miami, Fla. Motel. Alfred Parker, archt. — BTS — March, p. 111.

Aerial photography and site planning. See "Sites Moved to Office by Air Photos."

Air Conditioning, Graphical Symbols for. See Graphical Symbols.

"Air Conditioning Works With Design." Article on Texas Employers Insurance Assn. and Employers Casualty Bldg., Dallas, Tex. George L. Dahl, archts. & engrs. — AE — Jan., pp. 112–114.

Airport terminal, municipal, Chicago, Ill. Paul Gerhardt, Jr., City Archt. Feb., pp. 90–93.

Alhadeff, Mr. & Mrs. Charles D., owners. House, Seattle, Wash. Paul Thiry, archt. — Apr., pp. 118–124.

Allison & Rible, archts. Pitzer Hall, Claremont Men's College, Claremont, Calif. — BTS — June, pp. 122–123.

Apartments. 50 Joice Street Apartments, San Francisco; Windswept Apartments, Miami, Fla. — May, pp. 154–156, 157–159.

Architects' Collaborative, The. Catheron House, Foxboro, Mass.; Lawrence House, Lexington, Mass.; Neill House, Andover, Mass.; Providence, R. I. House. — BTS — May, pp. 128–136.

Architects' Office Bldg., Austin, Tex. Page, Southerland & Page, archts. & owners — May, pp. 114–115.

"Architectural Acoustics," Article 1: "Basic Planning Aspects"; Article 2. "Noise Control in Buildings" by Richard H. Bolt & Robert B. Newman. — AE — April, pp. 165–168; June, 166–169.

Art Center. Fine Arts Center, University of Arkansas, Fayetteville, Ark. — BTS — June, pp. 130–132.

"Artificial Sun — Artificial Sky." Solarscope demonstrated by scientists of the Commonwealth Experimental Building Station, Sydney, Australia. — Tech. News — AE — May, p. 166.

Arundel School, San Carlos, Calif. Ernest J. Kump, archt.; Mark Falk, engr. — BTS — April, pp. 134–135.

B

Balch, Albert, bldr. Revere Quality House, Seattle, Wash. Chiarelli & Kirk, archts. — BTS — May, pp. 137, 147.

Bamberger & Reid, archts. Buri-Buri Elementary School, South San Francisco, Calif. — BTS — April, pp. 145–147.

Bemis, John, engr. See Acorn House, The.

Black, Lee, & Black, Kenneth C., archts. School of Business Administration University of Michigan, Ann Arbor, Mich. Lynn W. Fry, supervising archt., University of Michigan — Mar., pp. 87–93.

Boak & Raad, archts. American Home Bldg., Queens, N. Y. — BTS — Jan., p. 94.

Bolt, Richard H. and Newman, Robert B. Articles, Architectural Acoustics: "Basic Planning Aspects," "Noise Control in Buildings" — AE — Apr., pp. 165–168; June, 166–169.

Borgenicht, Mr. & Mrs. Max, owners. House, Westport, Conn. Cordes, Bartos & Mihnos, archts. Charles Middeleer, landscape archt. — April, pp. 111–115.

Breuer, Marcel, archt. Cooperative Dormitory, Vassar College, Poughkeepsie, N. Y. — BTS — June, pp. 118–119.

Brown, Arthur T., archt. Tucson Biltmore, Tucson, Ariz. Motel — BTS — March, pp. 118, 125, 129.

Burrows, Frank F. See Williams, George F.

Bush-Brown, Gailey & Heffernan, archts. Harrison Hightower Textile Engineering Building, Georgia Institute of Technology, Atlanta, Ga. — BTS — June, pp. 124–129.

BUSINESS BUILDINGS, SMALL. Building Types Study No. 157, by Frederick Arden Pawley, archt. — Jan., pp. 94–111.

C

Callender, John Hancock, archt. See Acorn House, The.

Carneal & Johnston, archts. Esso Headquarters, Richmond, Va. — BTS — Jan., p. 99.

Carnegie Institute of Technology, Pittsburgh, Pa. School of Industrial Administration. — BTS — June, pp. 136–137.

Cesar, Roberto Cerqueira. See Levi, Rino.

Chelsea Housing Project, Chelsea, Mass. Hugh Stubbins, archt. — April, pp. 116–117.

Chiarelli & Kirk, archts. Revere Quality House, Seattle, Wash. Albert Balch, bldr. — BTS — May, pp. 137, 147.

Claremont Men's College, Claremont, Calif. Pitzer Hall. — BTS — June, pp. 122–123.

Classroom buildings. Pitzer Hall, Claremont Men's College, Claremont, Calif. — BTS — June, pp. 122–123.

Clay, Noble S., bldr. Revere Quality House, Pittsburgh, Pa. John A. Grove, Jr., archt. — BTS — May, pp. 137, 141.

Clements, Stiles Assocs., archts. Citizen's National Trust & Savings Bank, Los Angeles, Calif. — BTS — Jan., p. 98.

Cody, William F., archt. House for Dorothy Levin, Palm Springs, Calif. — Feb., pp. 85–89.

COLLEGE BUILDINGS. Building Type Study No. 161. June, pp. 102–145.

College Buildings. — BTS — June. Carnegie Institute of Technology, Pittsburgh, Pa. School of Industrial Administration. pp. 136–137; Claremont Men's College, Claremont, Calif., Pitzer Hall, pp. 122–123; Georgia Institute of Technology, Harrison Hightower Textile Engineering Building, pp. 124–129; Indiana University, Bloomington, Ind., Rogers Center Residence Halls, pp. 114–117; Maryville College, Maryville, Tenn., Fine Arts Center, pp. 133–135; Mt. Holyoke College, South Hadley, Mass., Lakeside Dormitory, pp. 106–107; Rice Institute, Houston, Tex., Library, pp. 138–142; University of Arkansas, Fayetteville, Ark., Fine Arts Center, pp. 130–132; University of Chicago, Chicago, Ill., Midwest Interlibrary Center, pp. 143–145; University of Michigan, Food Service Building — AE — June, pp. 162–165; Vassar College, Poughkeepsie, N. Y., Cooperative Dormitory, pp. 118–119.

Combined Heating Systems. See "House Panel-Convection Heating Systems."

Commonwealth Experimental Building Station, Sydney, Australia demonstrates solarscope in article, "Artificial Sun — Artificial Sky." — Tech. News — AE — May, p. 166.

Community Center. See Southern Brookline Community Center.

"Condensation Control For Houses." Vapor Barriers — 1. Floors & Side Walls — TSS—AE — Feb., pp. 135–137.

Conduit Installations. See Electrical Conduit Installations.

Construction Prospects. See "Some Observations on the Construction Outlook."

Container Corp. of America, Locker Room for. "Locker Room Concentrates on Efficiency." Designed by Rust Engineering Co. — May p. 165.

Convection Heating. See "House Panel-Convection Heating Systems."

Cooperative Dormitory. Vassar College, Poughkeepsie, N. Y. Marcel Breuer, archt. — BTS — June, pp. 118–119.

Cordes, Bartos & Mihnos, archts. Residence of Mr. & Mrs. Max Borgenicht, Westport, Conn. Charles Middeleer, landscape archt. — April, pp. 111–115.

Cret, Paul P., and Harbeson, Hough, Livingston & Larson, archts. U. S. Naval Hospital, Beaufort, S. C. J. N. Pease & Co., assoc. archts.-engrs. — Apr., pp. 101–110.

D

Dahl, George L., archts. & engrs. Remington-Rand Bldg., Dallas, Tex. — May, pp. 118–119; Texas Employers Insurance Assn. & Employers Casualty Bldg., Dallas, Tex. Jan., pp. 112–114.

Daylighting. See "Plastics Daylight a Fieldhouse."

DeWitt & Swank, archts. Revere Quality House, Dallas Tex. Angus G. Wynne, Jr., bldr. — BTS — May, pp. 137, 144.

Dietz, Albert G. H., Article, "Potentialities of Plastics in Building" — AE — Mar., pp. 132–137.

Dormitories. — BTS — June. Cooperative Dormitory, Vassar College, Poughkeepsie, N. Y., pp. 118–119; Kiskiminetas Springs School, Saltsburg, Pa., pp. 112–113; Lakeside Dormitory, Mt. Holyoke College, South Hadley, Mass., pp. 106–107; Rogers Center Residence Halls, Indiana University, Bloomington, Ind., pp. 114–117.

Drummond, Donald H. Revere Quality House, Kansas City, Mo. David B. Runnells, archt. — BTS — May, pp. 137, 142.

Dudley, Rosemary, Inc. See Gelders, Louis.

E

Eckbo, Garrett. Article, "Space & People," condensation of forthcoming book. "Landscape For Living" — Jan., pp. 69–75.

Editorials by Harold D. Hauf. "Toward Modern Architecture on the Campus" — June, p. 101; "Progress in Reverse," May, p. 11.

Edwards, Harlan H., Article, "A Roof Deck The Weather Won't Bother" — AE — Feb., pp. 132–133.

Electrical Conduit Installations. Condensed from *Aspects of Electrical Conduit Installations in Houses* by Jefferson D. Brooks. — TSS-AE — June, pp. 173, 175, 176.

El Rancho Motel, St. Albans, W. Va. Robert Martens, archt. — BTS — March, p. 118.

Eldredge, H. W., owner. House, Norwich, Vt. E. H. & M. K. Hunter, archts. — March, pp. 97–101.

Engelhardt, Engelhardt & Leggett. Article, "Planning Grade School Kitchens" — AE — April, pp. 169–170.

Esherick, Joseph, Jr., archt. Revere Quality House, San Bruno, Calif. Williams and Burrows, bldrs. — BTS — May, pp. 137, 146.

F

Falk, Mark, engr. See Kump, Ernest J.

Federal Homes, Inc., bldr. Revere Quality House, Salt Lake City, Utah. W. Rowe Smith, archt. — BTS — May, pp. 137, 147.

Federal Security Agency, U. S. Public Health Service, Div. of Hospital Facilities. Type Plans for State Public Health Laboratories — Feb., pp. 100–103.

Field house, University of Delaware. See "Plastics Daylight A Fieldhouse."

Fine Arts Center. Maryville College, Maryville, Tenn. Schweikher & Elting, archts. — BTS — June, pp. 133–135; Fine Arts Center, University of Arkansas, Fayetteville, Ark. Edward D. Stone, Haralson & Mott, assoc. archts. — BTS — June pp. 130–132.

Fishman, Maurice J., bldr. Revere Quality House, Cleveland, Ohio. W. D. Riddle, archt. — BTS — May, pp. 137, 142, 143.

Food Center (Supplies) School Kitchen. Food Service Building, University of Michigan — AE — June, pp. 162–165.

Freeman, Carl M., bldr. Revere Quality House, Bethesda, Md. Robison Heap, archt. — BTS — May, pp. 137, 141.

Fry, Lynn W. See Black, Lee.

G

Gelders, Louis, archt. Hunting lodge & summer cottage, Blue Hill, Me. Mrs. Wm. P. Palmer, Jr., owner, Rosemary Dudley, Inc., decorator. Jan., pp. 84–87.

Generating Station. See Sewaren Generating Station.

George Washington Motor Court, Fredericksburg, Va. R. R. Sollenberg, dsnr. — BTS — Mar., p. 127.

Georgia Institute of Technology, Atlanta, Ga. Harrison Hightower Textile Engineering Building — BTS — June, pp. 124–129.

George H. Lanier Memorial Hospital, Langdale, Ala. Robert & Co., assoc. archts. & engrs.; Jesse M. Shelton, assoc. archt. — June, pp. 146–153.

Gerhardt, Paul, Jr., city archt. Municipal Airport Terminal, Chicago, Ill. — Feb., pp. 90–93.

Gibbos & Heidtmann, archts. Simco Shoe Store, Jamaica, N. Y. — Mar., pp. 94–96.

Gilman, Alfred, archt. Santa Ynez Inn, Los Angeles, Calif. Motel — BTS — Mar., pp. 119, 125, 128.

Glaser, Samuel, archt. Revere Quality House, Boston, Mass. Arnold Hartmann, bldr. — BTS — May, pp. 137, 143.

Goldberg, Carney. See Richmond, Isidor.

Goodman, Charles M., archt. Revere Quality Houses, Alexandria, Va. Hollin Hills, Inc., bldr. — BTS — May, pp. 137–139.

Green, Robert A., archt. Transfiguration School, Tarrytown, N. Y. — BTS — April, pp. 148–151.

Grove, John A., Jr., archt. Revere Quality House, Pittsburgh, Pa. Noble S. Clay, bldr. — BTS — May, pp. 137, 141.

H

Halsey, Mr. & Mrs. Roy, owners. House, Hunt's Point, Wash. Paul Thiry, archt. Apr., pp. 118–124.

Hangars, steel arched. Port of New York Authority, New York International Airport. Lorimer & Rose, archts., Roberts and Schaefer, structural engrs. — AE — Apr., 161–164.

Haralson & Mott. See Stone, Edward D.

Harbeson, Hough, Livingston & Larson. See Cret, Paul C.

Hardware. Articles by Seymour Howard, The American Society of Architectural Hardware Consultants cooperating. Parts 10, 11, 12: Door Closing Devices — TSS–AE — Apr., pp. 172–173, 177; Parts 7, 8, 9: Hinges — TSS-AE — pp. 138, 143, 145.

Harriman, Alonzo J., archt. Articles: "A Design Study: School Operating Costs" — BTS — Apr., pp. 125–130; "Prototype School Born of Research." ("K-8" school for Maine community) — BTS — Apr., pp. 131–134.

Harrison Hightower Textile Engineering Bldg., Georgia Institute of Technology, Atlanta, Ga. Bush-Brown, Gailey & Heffernan, archts. — June, pp. 124–129.

Hartmann, Arnold, bldr. Revere Quality House, Boston, Mass. Samuel Glaser, archt. — BTS — May, pp. 137–143.

Hauf, Harold D. Editorials: "Progress in Reverse" — May, p. 11; "Toward Modern Architecture on the Campus" — June, p. 101.

Hawkins, Edward B., bldr. Revere Quality House, Denver, Colo. Eugene D. Sternberg, archt. — BTS — May, pp. 137, 141.

Heap, Robison, archt. Revere Quality House, Bethesda, Md., Carl M. Freeman, bldr. — BTS — May, p. 141.

Heating, Graphical Symbols: 1–Piping. 2–Heating and Ventilating. 3–Air Conditioning — TSS — AE — May, pp. 171, 173, 175; "Heating Cable Used for Snow Melting". Rockland Light & Power Co., Nyack, N. Y. — Tech. News — AE — Apr., p. 171; "Heating Systems for Houses," Articles by William J. McGuinness, Part IV: Cast Iron Baseboards — TSS–AE — Jan., pp. 120–123, 127–129; Convector Baseboard Heating Systems: 1–3 — TSS–AE — Mar., pp. 141–143; Convector Baseboard Heating Systems: 4–5 — TSS — AE — Apr. pp. 179–181; "House Panel — Convection Heating Systems." Article by Zay Smith — AE — May, pp. 163–164.

Highlands, The, Waldwick, N. J. Subdivision, Revere Quality Houses. Petroff & Clarkson, archts. Zamore Builds, Inc. bldr. — BTS — May, pp. 148–151.

Holden, Thomas S. Article, "Some Observations on the Construction Outlook" — June, pp. 22–26.

Hollin Hills, Inc., bldr. Revere Quality Houses, Alexandria, Va. Charles M. Goodman, archt. — BTS — May, pp. 137, 139.

HOSPITALS. Building Types Study No. 158, Feb. pp. 98–126; Cancer Hospital, Roswell Park Memorial Institute, Buffalo, N. Y. Isadore Rosenfield, archt. for Dept. of Health, State of New York — BTS — Feb., pp. 119–123; George H. Lanier Memorial Hospital, Langdale, Ala. Robert & Co. Assoc., archts. & engrs. Jesse M. Shelton, assoc. archt. — June, pp. 146–153; St. Clare's Hospital, Schenectady, N. Y. York & Sawyer, archts. — BTS — — Feb. pp. 119–123; Tuberculosis Hospital, Decatur, Ala. Charles H. McCauley, archt. Whitten, Snook & Adams, assoc. archts. — BTS — Feb., pp. 124–126; U. S. Naval Hospital, Beaufort, S. C., Paul P. Cret, archt. & Harbeson, Hough, Livingston & Larson (his successors) J. N. Pease & Co., assoc. archts-engrs. Thompson & Street Co., V. P. Loftis Co., gen'l contrs., Apr., pp. 101–110.

Hotel Management. Collaborator with ARCHITECTURAL RECORD on Building Types Study No. 159: Motels — Mar., pp. 101–131.

"House Panel-Convection Heating Systems." Article by Zay Smith — AE — May, pp. 163–164.

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K

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Kump, Ernest J., archt. Arundel School, San Carlos, Calif., Mark Falk, engr.; Eliot School, Gilroy, Calif.; Emerson School, San Luis Obispo, Calif.; Moorpark School, Campbell, Calif.; P. O. Hardin School, Hollister, Calif.; Shoreview School, San Mateo, Calif., Mark Falk, engr.; Teach School, San Luis Obispo, Calif. — BTS — Apr., pp. 134–139; Sill Bldg., Bakersfield, Calif. — BTS — Jan., p. 99.

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Lescher & Mahoney, archts. Brokerage Office for Merrill Lynch, Pierce, Fenner, & Beane, Phoenix, Ariz. — BTS — Jan., p. 104.
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McCauley, Charles H., archt. Tuberculosis Hospital, Decatur, Ala. Whitten, Snook & Adams, assoc. archts. — BTS — Feb., pp. 124–126.
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Martin, E. Wm., archt. See "Plastics Daylight a Field House."
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Motor Courts, site planning for. See "Sites Moved to Office by Air Photos."
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"Mountain Inn Built with Plastics." Skyline Inn, Mt. Equinox, Vt. — AE — Jan., p. 119.
Murphy, Joseph D., archt. St. Gregory's School, St. Ann's Village, St. Louis County, Mo. — BTS — Apr., pp. 154–155.
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O

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Orr, Douglas, The Office of, archt. Lakeside Dormitory, Mt. Holyoke College, South Hadley, Mass. — BTS — June, pp. 106–107.

P

Page, Southerland & Page, archts. Own drafting room — BTS — Jan., p. 94; own office building, May, pp. 114–115; home of Mr. and Mrs. Louis F. Southerland, Austin, Tex. — Mar., pp. 102–105.
Palmer, Mrs. Wm. P., Jr., owner. Hunting lodge & summer cottage, Blue Hill, Me. Louis Gelders, archt. Rosemary Dudley, Inc., decorator — Jan., pp. 84–87.
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Pepper Tree Inn, Palm Springs, Calif. Stewart Williams, archt. — BTS — Mar., pp. 110–111, 130–131.

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Perry, Shaw & Hepburn, archts. Laboratories & offices, National Research Corp., Cambridge, Mass. — Jan., pp. 88–93.

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Piping, Graphical Symbols for. See Graphical Symbols.

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Place, Andrew S., bldr. Revere Quality House, So. Bend, Ind. L. Morgan Yost, archt. — BTS — May, pp. 137, 140.

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R

Randolph, Frank Harrison. Article, "Space Allotments for Commercial Hotels" — AE — Feb. pp. 127–131.

Remington-Rand Building, Dallas, Tex. (small office bldg.) George L. Dahl, archts. & engrs. — May, pp. 118–119.

Restaurant — redeveloped. Palm Springs, Calif. A. Quincy Jones, Jr., archt. Paul R. Williams, assoc. — Feb., pp. 94–97.

Return Motor Court, New Market, Va. Clarence W. Wenger, archt. — BTS — Mar., pp. 111, 119.

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Riddle, W. D., archt. Revere Quality House, Cleveland, O. Maurice J. Fishman, bldr. — BTS — May, pp. 137, 142–143.

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Rosenfield, Isadore, archt. Cancer Hospital. Hospital Park Memorial Institute, Buffalo, N. Y. — BTS — Feb., pp. 112–118.

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Runnells, David B., archt. Revere Quality House, Kansas City, Mo. Donald H. Drummond, bldr. — BTS — May, pp. 137, 142–143.

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Schopfer, Gordon, archt. Revere Quality House, Syracuse, N. Y. Mayer & Rebhahn, bldr. — BTS — May, pp. 137, 147.

Schweikher & Elting, archts. Fine Arts Center, Maryville College, Maryville, Tenn. — BTS — June, pp. 133–135.

Sewaren Generating Station. Public Service Electric & Gas Co., owners and engrs. Walker & Poor, consult. archts. United Engineers & Constructors, Inc., bldrs. — May, pp. 108–113.

Sharp, Frank W., bldr. Revere Quality House, Houston, Tex. MacKie & Kamrath, archts. — BTS — May, pp. 137, 140.

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Shelton, Jesse M., assoc. archt. See Robert & Company Associates.

Shopping Center (proposed), Great Neck, L. I. See "Sites Moved to Office by Air Photos" — AE — May, pp. 159–162.

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Solarscope. See "Artificial Sun — Artificial Sky."

Sollenberg, R. R., Dsnr. George Washington Motor Court, Fredericksburg, Va. — BTS Mar., p. 127.

Southerland, Mr. and Mrs. Louis F., owners. House, Austin, Tex. Page, Southerland & Page, archts. — Mar., pp. 102–105.

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Stone, Edward D.; Haralson & Mott, assoc. archts. Fine Arts Center, University of Arkansas, Fayetteville, Ark. — BTS — June, pp. 130–132.

Stone & Thompson, archts. Motel Robert, Christiansburg, Va. — BTS — Mar., p. 116.

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Stubbins, Hugh, Jr., archt. Chelsea Housing Project, Chelsea, Mass. — Apr., pp. 116–117.

Summer cottage. See hunting lodge, Blue Hill, Me.

T

Technical Instrument Company (small office building), Houston, Tex. MacKie and Kamrath, archts. — May, p. 117.

Temple Emeth, Brookline, Mass. See Southern Brookline Community Center.

Texas Employers Insurance Association and Employers Casualty Building, Dallas, Tex. See — Air Conditioning Works With Design.

Textile Engineering Building. See Harrison Hightower Textile Engineering Building.

Thalheimer & Weitz, archts. Remington-Rand Building, Phila., Pa. — BTS — Jan., p. 94.

Thiry, Paul, archt. Residence of Mr. and Mrs. Charles D. Alhadeff, Seattle, Wash.; Residence of Mr. and Mrs. Roy Halsey, Hunt's Point, Wash. — Apr., pp. 118–124.

Thompson & Street Co., general contractors. See Cret, Paul P.

Thornhill-Craver Building, Houston, Tex. MacKie & Kamrath, archts. — May, p. 116.

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U

United Engineers & Constructors, Inc. See Sewaren Generating Station.

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University of Delaware. See Martin, E. William.

V

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W

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Williams, George F., and Burrows, Frank F., bldrs. Revere Quality House, San Francisco, Calif. Joseph Esherick, Jr., archt. — BTS — May, pp. 137, 146.

Williams, Paul R. See Jones, A. Quincy, Jr.

Williams, Stewart, archt. Pepper Tree Inn, Palm Springs, Calif. — BTS — Mar., pp. 110–111, 130–131.

Wischmeyer & Lorenz, archts. Mason Ridge School, St. Louis County, Mo. — BTS — Apr., pp. 152–153.

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Y

Yamasaki, Minoru, dsnr. See Michigan Bell Telephone Co.

York & Sawyer, archts. St. Clare's Hospital, Schenectady, N. Y. — BTS — Feb., pp. 119–123.

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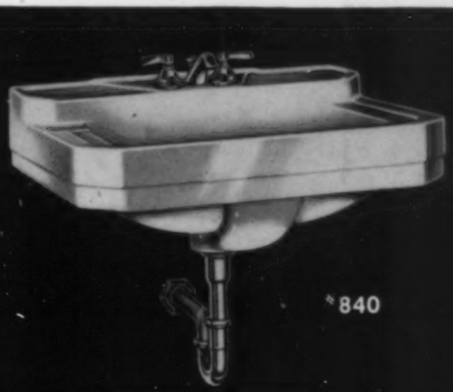
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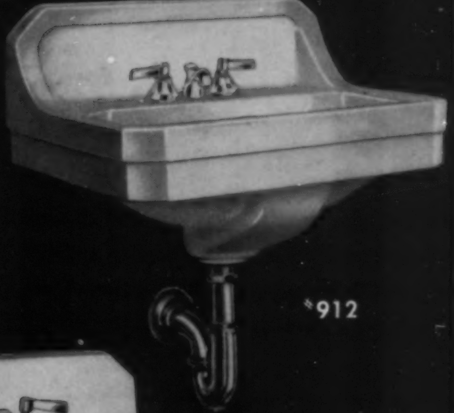
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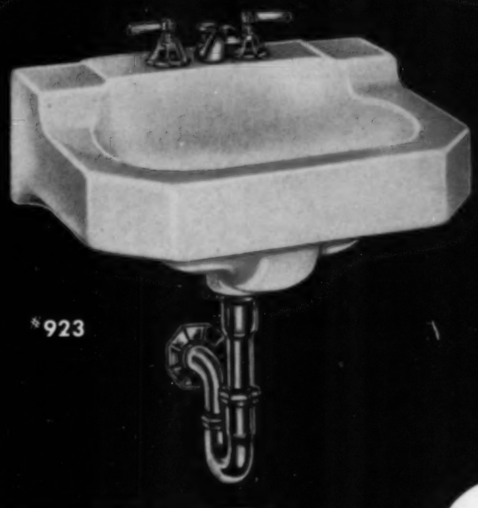
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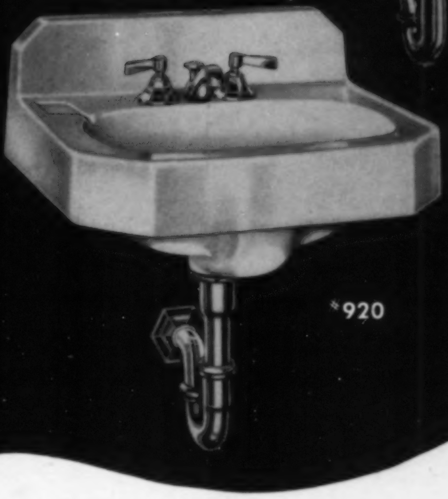
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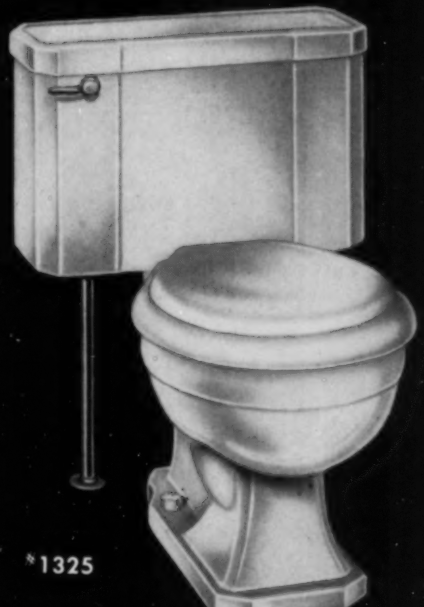
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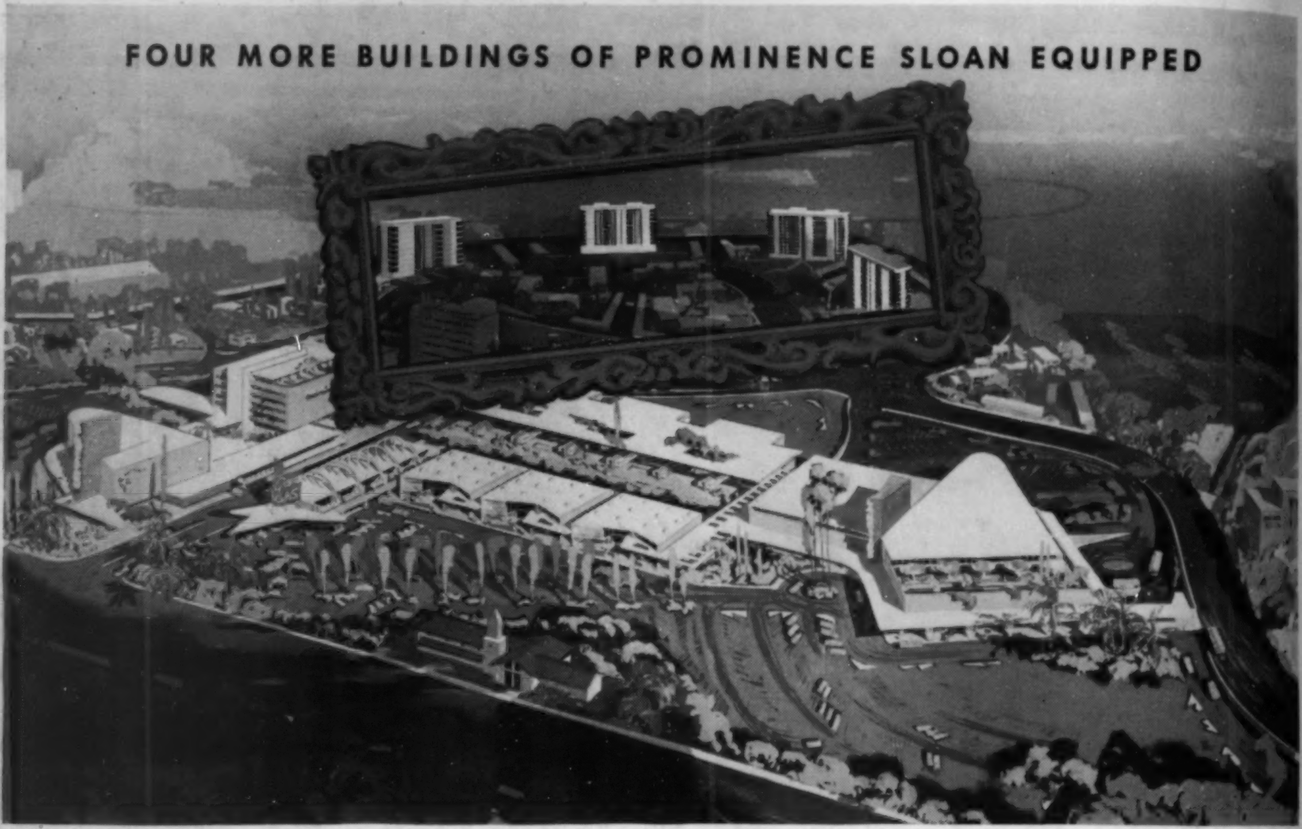

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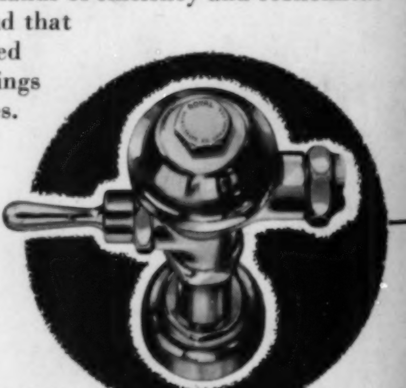

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